Safety Maintenance

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BULLETINS & CATALOGS

As a convenience to executives, these new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE. To obtain copies write in the key numbers on the free-postage card below.

PLANT MAINTENANCE

Protective Coating Selector Guide 310
Master Bronze Powder Co. New 16-page catalog describes a line of protective coatings to prevent rusting of various types of surfaces. Featured is a selector guide to help determine the most effective and economical coating for various problem areas. Information on rust preventive applications serves as basic reference material for maintenance men and engineers.

Hydraulic Jet Tank Cleaner 311
Sellers Injector Co. This bulletin describes a high-capacity water-driven unit for cleaning the inside of large tanks, tank cars and marine tanks. It shows how the unit can discharge from 4000 to 9400 gph of hot water, using only a ship's or plant's pump and lines at moderate working pressures, and provides a 50 foot range.

Ultrasonic Thickness Tester 312
Branson Instruments, Inc. Two portable thickness testers that measure ultrasonically the thickness of metal, glass, plastic, etc., are described in this bulletin. It shows how the units can be used to detect flaws and check for corrosion loss on pressure vessels, piping, tanks, tubes, ship hulls, forgings, extrusions, castings, etc.

Machine and Manual Brushes 313
Flour City Brush Co. This 1960 catalog, 120 pages, presents a complete line of over 1000 items for maintenance cleaning. Includes replacement brushes for rotary machines as well as all types of floor and scrubbing brushes, fountain-type brushes, wet and dry mops and accessory articles for industrial and commercial building cleaning.

MISCELLANEOUS

Daylight Fluorescent Paints 314
Switzer Brothers, Inc. The dramatic gain in visibility of daylight fluorescent safety paint over conventional safety colors is illustrated very effectively in this new brochure. Through the use of a diagonal flap, the interior of a typical industrial plant is bisected to show the fluorescent paint compared to normal safety color on crane hooks, trucks, switches, fire extinguisher, railings, signs, etc. Also gives nine detailed applications of the paint to hazards and safety equipment.

Electronic Machine Guard 315
Security Controls, Inc. A safety control for protecting personnel and machines against injury as hands, tools or any undesirable object enters a dangerous work area is described in this bulletin. Applications, method of operation and full details of components are covered.

Anti-Static Coatings 316
Meriz Chemical Co. Two new chemical products to prevent the generation of electrostatic charges are described in this bulletin. One is to remove static charges from metal or plastic surfaces and keep surfaces dust-free. The other is for textiles, plastic sheeting and carpets.

Relay Testing Tools 317
Multi-Amp Div., Multi-Amp Electronic Corp. This 48-page booklet offers a standard line of units for relay testing. Includes classification of relay tests, reasons for adequate testing and maintenance, how to select relay test units, chart of unit features, selection chart, etc.

Pipe and Wire Markers 318
Seton Name Plate Co. This illustrated bulletin describes a line of self-adhering, pressure sensitive vinyl markers for identifying pipes, cables, conductors, tubing, tanks, etc. Includes list of stock wordings and gives information on ordering special wordings. Shows recommended colors and gives data on placement of the markers and their uses.

PERSONAL PROTECTIVE EQUIPMENT

Linemen's & Electrical Protective Equipment 319
Charleston Rubber Co. A new illustrated catalog for use in public utility and industrial electric fields describes a full line of protective rubber gloves and sleeves, giving instructions on correct care and usage. Shows high and low voltage gloves, sleeves, glove protectors, innerliners, danger flags, standards and other accessories. Also lists other technical reports that are available free, and includes a glove selector chart, ordering instructions.

Welding Equipment Catalog 320
Sellstrom Mfg. Co. A new 28-page catalog features a full line of protective equipment for welders: goggles, helmets, face shields, lenses, respirators, etc. Excellent photographs and cut-away drawings show construction details.

Industrial Clothing 321
Workon, Inc. The colorful new 1960 catalog gives information on acid and caustic resistant work clothes made of synthetic fibers, such as Dacron, Dynel and Orlon. Includes lint-free and static-free types for both men and women in industrial and chemical plants and laboratories. Has sample swatches of fabrics and lists the chemicals to which the various fabrics are resistant.

Ventilated Face Shields 322
American Optical Co. A unique new type of face shield is featured in this bulletin that

(Continued on the next page)

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READER'S INQUIRY CARD

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Free Bulletins (Cont'd)

also gives data on a full line of plastic shields. The featured item is a wire-mesh face shield that provides better circulation of air but has an inset plastic window directly in front of the eyes for positive protection of the eye area and for better visibility.

Safety Hats & Caps 323
Willson Products Div., Ray-O-Vac Co. Industrial safety hats and caps of fiber glass, aluminum, and phenolic construction are described and well illustrated in this bulletin. Includes insulating type for electrical workers, gives recommended uses and details of the Geodetic suspension for maximum safety, and offers a line of accessory items such as winter liners, welding helmets and face shields, lamp brackets, etc.

INDUSTRIAL HYGIENE

Salt Tablets 324
U. S. Safety Service Co. This new ordering bulletin gives prices and information on slow-dissolving salt tablets to prevent heat fatigue and prostration on hot jobs or during the summer months. Three types of packaging are offered: bulk boxes, expendable dispensers, and pocket packs.

Automatic Radiation Monitoring . 325
BJ Electronics, Borg-Warner Corp. Automatic monitoring of gamma and beta radiation is discussed in a new booklet which shows how a portable instrument is used to monitor background in low-level counting rooms, "hot" labs, industrial radiography installations, etc.

Oxygen Rescue Equipment 326
Globe Industries, Inc., Medical & Hospital Dept. Illustrated bulletin describes two models of self-contained breathing apparatus for quick entry, rescue and escape. Also shows how mask can be used with hose-line for more extended work requirements.

Filter Material 327
Gelman Instrument Co. This manual describes a new plastic filtering material for removing sub-micron particles from gases and fluids. In addition to uses in the control of industrial dust and fume, the filter has application in bacteriology, medical research, food and beverage sterilization, hydraulic engineering, etc.

What's YOUR Problem?

- **Has an accident or fire interrupted production?**
- **Want to know how to prevent it?**
- **Do you need background information on equipment for industrial safety, hygiene, or maintenance?**

As a service to its readers, "Safety Maintenance" will arrange to supply manufacturers literature on the following subjects. Just insert the key number on the Readers Inquiry Card on the preceding page and be sure to fill in your name and address. If you need information on a specific type of product, simply write it in on the Inquiry Card.

Key Number	Subject
	PERSONAL PROTECTION
101	Safety Goggles
102	Face Shields
103	Lens Cleaning & Anti-Fogging Equipment
104	Sweat Band
106	Respirators & Masks
107	Protective Clothing
108	Women's Protective Clothing
109	Safety Belts
110	Safety Gloves
112	Anti-Slip Soles
113	Oil-Resistant Soles
114	Welding Helmets
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121	Skin Cleansers
122	Sanitary Drinking Facilities
123	Wash-up Facilities
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127	Burn Medication
128	First Aid Kits & Supplies
129	Stretchers & Litters
130	Throat Medication
131	Eye Wash Fountains
132	Portable Ventilators
133	Dust Collectors
135	Hearing Protectors
	FIRE PROTECTION
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140	Fire Extinguishers
141	Safety Cans
142	Fire Alarms
143	Safer Solvents
144	Degreasing Machines
145	Drum Safety Valve
146	Asbestos Textiles
147	Incinerators
148	Watchmen's Control Systems
149	Fire Blankets

Key Number	Subject
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	EDUCATIONAL AIDS
191	Safety Signs
192	Safety Awards & Emblems
193	Employee Safety Guide
195	Changeable Letter Signs
196	Safety Poster Kit

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Safety Maintenance

formerly "SAFETY ENGINEERING"

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Cover picture by courtesy of Mine Safety Appliances Co. For explanation, see illustrated article on page 17.

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it's SAFE to say

● NEXT TO PRODUCTION

Authorities in the industrial field have estimated that illness absenteeism in industry generally is ten times more costly than industrial accidents. If we consider that the true cost of accidents, including all the indirect as well as the direct medical expenses aggregate a stratospheric sum of money, then ten times that figure for illness absenteeism is so far in outer space as to be practically incomprehensible to the average mind.

Discounting the all too common cold and other forms of respiratory ailments, by far the greatest single cause of illness at work is traceable to inflammation of the skin, commonly grouped under the generic name of dermatitis which accounts for fully 75 percent of all industrial illness.

While it is true that normal skin characteristics vary and that some races are more susceptible to dermatitis than others, medical authorities agree that scrupulous cleanliness and continuing practice of hygiene can be the first step in preventing this increasingly widespread threat to production and well-being.

Plant officials know that the prevalence of industrial dermatitis is not only costly and painful but it affects the morale of workers which in turn affects their safety. To increase morale, efficiency—another name for productivity—personal pride and to reduce medical expenses and the cost of absenteeism, hygiene must become an integral part of all plant safety programs. In the case of female employees, this takes on added significance.

Hit-or-miss hygiene will not solve the problem of industrial dermatitis with its attendant losses to both management and employee. It is not enough to provide soap, water and towels. Unnecessarily soiled work garments or oil-soaked clothing can predispose the skin to pimples, boils, acne and various forms of skin rash . . . and dermatitis, like smashed fingers, broken toes or an eye injury, comes under various schedules of workmen's compensation.

This cleanliness—before, during and after the shift—becomes Step No. 1 in all industry's march toward better safety records, better employee relations, lower costs and stepped-up efficiency and economical production—the goal of management everywhere.

Employees who perspire excessively can become an early prey to skin troubles. Brunettes often are more susceptible to dermatitis than blondes and younger employees are affected more frequently because the skin has not had time to accustom itself to dusts or harmful substances and atmospheres. Obviously, in any history of dermatitis the affected victim should be removed from the contaminant if possible. Where necessary, protective creams and properly designed work clothing of dermatitis-combatting textiles should be used in the presence of the hazard. Cutting oils need the additive of cutting oil disinfectants to destroy or inhibit the growth of bacteria.

Cleanliness may or may not be next to godliness but especially where dermatitis is a remote possibility, it certainly is next to production and company profits.

Bethlehem, Pa. *May 2–4*

Thirty-Third Annual Eastern Pennsylvania Safety Conference (Hotel Bethlehem). Harold A. Seward, secretary, Lehigh Valley Safety Council, 602 E. 3rd St., Bethlehem, Pa.

Winston-Salem, N. C. *May 4–6*

Thirtieth Annual North Carolina Statewide Industrial Safety Conference (Robert E. Lee Hotel). H. S. Baucom, Director of Safety, North Carolina Industrial Commission, Raleigh, N. C.

Richmond, Va. *May 5–7*

Virginia Safety Association Conference (John Marshall Hotel). Va. Safety Association, 2501 Monument Ave., Richmond 20, Va.

Seattle, Wash. *May 12*

Fourth Annual Puget Sound Industrial Safety Conference & Exhibit (Olympic Hotel). Seattle-King County Safety Council, 304 Spring St., Seattle 4, Wash.

Duluth, Minn. *May 19–20*

Thirty-Sixth Annual Conference of the Lake Superior Mines Safety Council (Hotel Duluth). Allen D. Look, Secretary, Lake Superior Mines Safety Council, 321 Federal Bldg., Duluth 2, Minn.

Bridgeport, Conn. *June 6–7*

Fifteenth Annual Statewide Conference of the Connecticut Safety Society (University of Bridgeport). William W. White, Publicity Director, Connecticut Safety Society, 855 Burnsford Ave., Bridgeport, Conn.

Raleigh, N. C. *September14–17*

Second Annual Southeastern Maintenance and Engineering Show & Conference (State Fair Arena). Robert E. Zimmerman, Manager, John Harden Associates, P. O. Box 3173, Greensboro, N. C.

Chicago, Ill. *October 17–21*

Forty-Eighth Annual National Safety Congress and Exhibit (Conrad Hilton, Pick-Congress, Sheraton Towers, Morrison, and La Salle Hotels), R. L. Forney, Secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Pittsburgh, Pa. *October 26–27*

Twenty-Fifth Annual Meeting of the Industrial Hygiene Foundation (Mellon Institute). Dr. H. H. Schrenk, Managing Director, Industrial Hygiene Foundation, 440 Fifth Ave., Pittsburgh 13, Pa.

Chicago, Ill. *Jan. 30–Feb. 2*

Twelfth National Plant Maintenance & Engineering Show and Conference (International Theatre). Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y.

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Ultrasonics at work . . .
CORROSION SURVEYS and FLAW DETECTION

AUDIGAGE® 6 — the new miniaturized, self-powered "mighty midget" Thickness Gage and Flaw Detector. Ideal for corrosion surveys by one man in awkward locations. Weighs less than 5 pounds complete. Uses new high-sensitivity, high-resolution **Type Z** transducers, flat or curved, in various mounts for every application. Measures directly in inches between 0.09" and 5.0". **BULLETIN A-201.**

AUDIGAGE® 5 — the standard self-powered instrument for field corrosion surveys when greater range or accuracy than Model 6 are required. **BULLETIN A-2.**

VIDIGAGE® 14 — the high-accuracy, high-speed, ultra-sensitive gage with a 14" CR tube. Range 0.005" to 2.7" with accuracies to 1/10 of 1%. Interchangeable oscillators and direct-reading scales. Extension cables and intercom phones for remote testing up to one-fifth mile from the basic instrument. **BULLETIN V-200.**

SONORAY® 5—the new portable, high-performance pulse-echo Flaw Detector for testing weldments, shafts, plates, etc., and detecting other internal flaws. Only 37 lbs., 7½" x 11" x 20¼" long. **BULLETIN T-203.**

Send Coupon to **BRANSON INSTRUMENTS, INC.**
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(Use Key # R-2 on Inquiry Card on page 1)

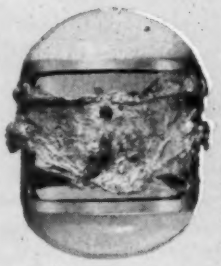
New CESCO MULTI-PLY WINDOWS

pass molten lead and air rifle "torture" tests

Here's dramatic, conclusive proof of resistance to heat and impact like you've never seen in a face shield window before! CESCO's new Multi-Ply windows were subjected to these torture tests with results that speak for themselves...

TEST NO. 1

A .22 cal. air rifle with a muzzle velocity of 450 ft. per sec. was fired at a .045" Multi-Ply window from a distance of 35 feet. Only a small superficial dent resulted. There was no shattering, no penetration. However, the same gun fired from the same distance pierced .032" Aluminum (24ST3) and .040" Cellulose Acetate regularly used for face shield windows.



TEST NO. 2

A ladle containing 6½ lbs. of 635 degree molten lead was poured on a Multi-Ply window for 45 seconds. Though the hot lead was poured on the same spot, none of it penetrated the window. Under identical circumstances a .040" acetate window melted in 9 seconds after only ½ lb. of lead was poured.

•Heretofore the only way to be assured of increased resistance to heat and impact was to buy a window of increased thickness. But now CESCO Multi-Ply offers you vastly superior protection in one low-priced, volume-produced window—just .045" thick. Multi-Ply is available in CESCO's six basic face shields—featuring fiber glass crowns and shells—new G-3 Nylanite headgear. Readily interchangeable with hard hats, the G-3 has a broad pivoting cross band adjustable for height and an offset cambered rear headband that's the last word in comfort.

CESCO

Write ***for free booklet giving prices and full details about Multi-Ply windows***

CESCO FOR SAFETY

CHICAGO EYE SHIELD COMPANY • 2709 West Roscoe Street, Chicago 18, Illinois

THE SANDWICH THAT SAVES LIVES

A chemical flask slipped from the fingers of a French scientist, crashing to the tiled floor of his laboratory.

The flask cracked. *But it did not shatter.*

That was 57 years ago. And thanks to that fluke of fate, the lives of thousands were saved, other thousands were spared untold suffering and a multi-million-dollar industry was born.

"I picked up the flask and saw that it was indeed cracked in a radial pattern," Dr. Edouard Benedictus noted in his diary. "But all the parts were held together as by an inner force!"

Because a celluloid solution coated its inside surface, the flask had retained its shape.

A clumsy but observant young man had stumbled on the secret of laminated safety glass which is much like a sandwich made of plastic bonded between layers of glass.

Before invention of the glass "sandwich" which evolved from Dr. Benedictus' accident, showers of flying glass were responsible for many deaths and mutilations. Laminated safety glass is the rule today for automobile windshields, airplane glazing, railroad cars and buses.

Steel ball drop test shows the laminated safety glass breaking but being held together by transparent plastic interlayer. Such glass has wide range of safety uses.

Glass That Bends

A tough, resilient plastic "filling" called vinyl butyral is the secret of today's safety glass sandwich. Bonded as a film between two sheets of glass, this "filling" makes glass so miraculously resistant—it literally will *bend* with the blow of a flying object; actually will collapse without shattering under the pressures of atomic explosions.

Laminated safety glass, in fact, shields building occupants from the terrible rain of flying fragments which wreaked bloody havoc during World War II air raids—causing 80 percent of the casualties.

Peacetime hazards in thousands of control rooms, laboratories and similar structures of today are the latest target for laminated safety glass. Here, too, Dr. Benedictus' discovery provides a shield against the perils of the industrial world we live in.

Insurance companies and government agencies are cooperating to reach this goal of safer industrial glazing.

Some of the newer glass towers which dominate today's urban skylines owe their soaring beauty and their practical virtue to laminated safety glass. Softly tinted ambers and greens can be incorporated in the glass which is used in most of these airy structures so that the glare of sunlight is excluded or softened.

Brilliantly translucent, tinted against harsh light, or even opaque, laminated safety glass in all its versatile forms is taking its place in modern decor. Topflight decorators feature it in sleek, streamlined doors, in foyers, shower enclosures, room dividers and table tops.

But all is not glamour in the world of laminated glass: Gymnasiums have found that Dr. Benedictus' "accident" has led to the perfect material for basketball backboards. And more uses for laminated glass may soon be found in the hurly-burly of the baseball diamond or the hockey rink.

Commercial Uses

Security conscious jewelers demand it for display windows. Bankers, for teller cages. And alert guards rely on it for the bullet-proof windows of official limousines and armored cars.

Because it goes "limp" when broken, instead of shattering into flying fragments, it is finding its way into windows of industrial con-

trol rooms and other structures exposed to hazards of explosions, for guards on machines, and as shields in laboratories.

Photographic data show that this "limp" quality is not unlike a safety valve. It occurs at a pressure just below that at which structural failure begins to take place.

It may well be that the first man to land on the moon will first see that planet's eerie landscape through a window of laminated safety glass. Windows of this amazingly tensile material already are standard for pressure chambers and high-altitude aircraft.

Picture by courtesy of Monsanto Chemical Co.

Disaster Conference

Disaster, no matter what its cause, poses major problems for industry, its management, employees, surrounding communities and stockholders. Quite often disaster is of such far-reaching consequence that it affects the national economy and our national posture for defense. Since a single facility cannot provide all the resources necessary to meet a major emergency, reliance has been placed primarily on local fire departments.

Pooling Resources

During the last seven years an idea has been generated in various circles of industry which fosters the pooling of resources of several plants and businesses in a given area for the purpose of augmenting local capabilities to cope with industrial accidents, fires, explosions, floods, tornadoes, and many other types of emergencies.

This concept, which today is commonly referred to as Industrial Mutual Aid, is actively encouraged by the Department of Defense and the Armed Services. Already during the infancy of Mutual Aid, the Department of the Air Force realized its true value, not only because of its benefit to industry itself, but also because effective Mutual Aid among industries would serve an important role in reducing the impact which disasters and emergencies have on production in general and defense production specifically.

Against this background, Hq Air Materiel Command (AMC), which is responsibile for converting the nation's resources into superior Military Airpower, will co-sponsor the 4th National Industrial Mutual Aid and Disaster Control Conference to be held 18, 19 and 20 May 1960 at the Netherland-Hilton Hotel, Cincinnati, Ohio.

Sponsoring this conference will be the National Institute for Disaster Mobilization (NIDM). This national non-profit membership association, founded in 1942, is dedicated to the advancement of non-military defense, industrial mutual aid and disaster control.

The Evendale, Ohio Industrial Mutual Association (EMA) will host the conference. This association has been recognized as one of the best organized, and most spirited mutual aid associations in the country. Among its thirty-six industries participating are such well-known names as: American Cyanamid, Crosley Div. of AVCO,

"I always work with safety glasses. Eyesight is important to a nature lover."

Ford, Formica, General Electric, General Motors, New York Central and Pennsylvania Railroads, Pollak Steel, Scovill Mfg. Co. and Westinghouse. Also participating are lumber, paper and trucking companies, banks, municipal organizations, etc. This organization is dedicated to prevent, control and minimize disaster and assist in the restoration of plant facilities after disaster. It also seeks to bring about more adequate protection for participating industries in case of disaster.

Also co-sponsoring this conference will be the Office of Civil and Defense Mobilization (OCDM). This is particularly noteworthy since this agency operates as an Executive Office of the President and is responsible for managing and directing civil defense and defense mobilization programs of the nation.

This conference, which has in previous years received Presidential endorsement, brings together management of industry, industrial Mutual Aid authorities, disaster control officials and others working toward greater effectiveness of industrial plants and communities to cope with peacetime disaster and possible enemy attack.

Conference workshops and discussions will concern themselves with the solution of specific disaster situations and new techniques in disaster control and industrial mutual aid will be discussed. A full scale disaster exercise is scheduled which will realistically demonstrate how a major disaster can be averted in a large plant through effective utilization of industrial mutual aid.

Exhibits and demonstrations of Equipment and Services will be provided to acquaint the conferees with the latest and best materials for strengthening their in-plant and intra-plant programs for disaster control.

The Executive Conference Committee welcomes firms interested in displaying products designed to either detect, eliminate, minimize or control hazards, emergencies, disasters, etc. Exhibit space will be available in the Netherland-Hilton Hotel. Space is also available outside the Municipal Building, Evendale, for outdoor equipment and large items.

Registration fee covering the entire conference is $35.00. This cost includes Get Acquainted Cocktail Hour, bus transportation to and from the Test Exercise, banquet, buffet luncheon, coffee breaks, printed conference proceedings, etc.

For further information write: Evendale Mutual Aid Association (EMA), P.O. Box 151, Cincinnati 15, Ohio, or Hq. Air Materiel Command, Attn.: Mr. Robert B. Kahn—MCPM, Wright-Patterson Air Force Base, Ohio, or NIDM, Inc., Suite 501, 475 Fifth Avenue, New York 17, New York.

Fireman speaks over communication system to crane operator from soaking pit floor. Unit has microphone speaker.

INTER-COM SYSTEMS AID SAFETY

WARNING EQUIPMENT SERIES
Other Articles April & June

Hand and whistle signals have fallen prey to progress. More modern means of communication between crane-cab and floor workers now are in use in many plants, such as the Sheffield Steel division of Armco Steel Corporation in Kansas City, Missouri.

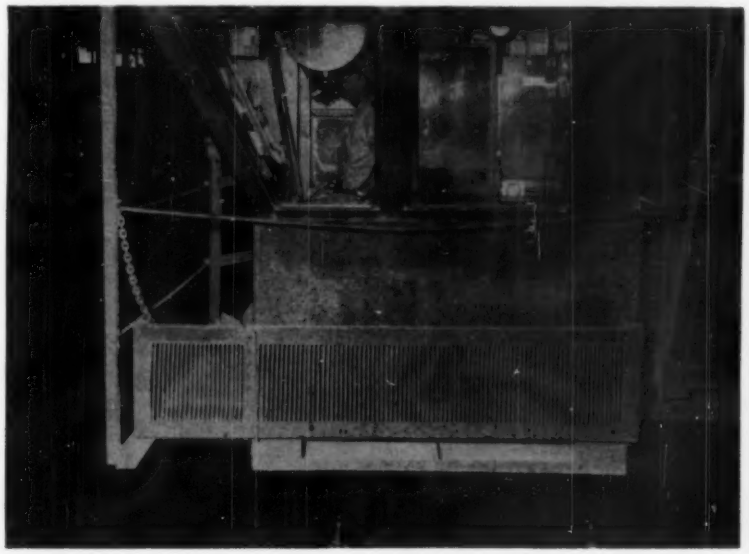
The installation of a crane FM carrier communications system has obsoleted other signal systems. It has made possible clear oral communications without interference or risk of misunderstandings.

Three stations in crane cabs with a base station, a remote station in the soaking pit area, and a base station and a crane cab station in the blooming mill made up the initial installation.

Each mobile or crane station consists of a loud speaker, an adjustable microphone, and a foot switch to close the microphone circuit while leaving the operator's hands free at all times.

The base or ground stations are compactly housed units. Each has

(Continued on page 46)



Adjustable equipment permits operator in crane cab to talk directly into the microphone. Hands are free to handle controls.

Practical Plant Maintenance

How color affects maintenance efficiency
How to install coolant-using machines to simplify maintenance
How to handle rubbish effectively
How not to be snowed under by snow problems

CLEANING FREQUENCIES

A frequency of 3/1 means three times per day (once per shift), a frequency of 1/5 means once every five working days (once per week); and 1/20 means once per twenty working days (approx. once per month). Note that the schedules list the highest frequency items first.

Typical Manufacturing Area Office Cleaning Schedule

(Medium mottled green vinyl floor tile, two rest rooms, and a conference room included)

	Daily Frequency
Sweep floor	3/1
Machine scrub floor	2/5
Clean wash basins	3/1
Service soap dispensers	3/1
Service tissue dispensers	3/1
Service paper towel	3/1
Clean and straighten janitors supply closet	3/1
Clean janitors scullery sink	1/1
Clean toilet water closets	1/1
Service sanitary napkin dispenser	1/1
Empty sanitary napkin disposition receptacle	1/1
Clean urinals	1/1
Clean water cooler drinking fountain	1/1
Clean mirrors	1/1
Wash blackboards	1/1
Dust desks	1/1
Dust tables	1/1
Clean ashtrays	1/1
Empty wastepaper	1/1
Dust chairs	1/5
Dust filing cabinets	1/5
Damp wipe shelves	1/5
Wash office partition windows and remove obvious local soiling from wood panels	1/5
Wash display case glass	1/5
Paraffin treat toilet seats	1/5
Wash toilet booth partitions & walls	1/10
Wash urinal partitions	1/10
Wash rest room tile walls	1/20
Wash desks	1/40
Wash tables	1/40
Wash files	1/40
Wash office walls (including wood panels)	1/240

(Continued on page 12)

If **both** visitors and employees are to consider a company a good place to work, good housekeeping and effective sanitation practices are necessary throughout both manufacturing and office areas.

For an office building sanitation operations consist of floor care, general cleaning, and rest room care; but in an industrial plant a far greater range of associated operations are performed: (1) office cleaning, (2) rest room and locker room sanitation, (3) cafeteria and kitchen cleaning, (4) cleaning of production machines and equipment, (5) cleaning of manufacturing areas, (6) disposal of wastes, (7) roadway and external cleaning, (8) snow removal, and (9) lawn care. Building painting and equipment painting programs are also closely associated with industrial housekeeping.

Office Cleaning, Rest Room and Locker Room Sanitation

These operations in manufacturing plants are similar to those in commercial office buildings, but the increased job performance frequencies and the increased amount of soiling to be removed change the unit job performance figures and increase the total costs for areas adjacent to or contained within manufacturing areas.

For example, in machine shops the oil and grease contamination of shop floors is tracked into nearby office, rest room, locker room and first-aid stations. Steel cuttings embedded in shoe soles increase the scratching and abrasion of floor materials which in turn increase the difficulties of cleaning the floors. In foundry operations tracked-in sand increases both the floor soiling and the abrasive wear of the floor surface.

The choice of floor colors influences the cleaning frequency re-

Tips

by K. M. SMITH
Maintenance Engineer
Caterpillar Tractor Co.
Peoria, Illinois

quired to maintain a given level of appearance. For example, a mottled medium green floor tile will show grease staining in a machine shop office much sooner than will a medium to dark brown tile in the same location. The very dark colors will show tracking from dry dusts and moist solids, and they will also show foot traffic scratch marks very easily. Light colored ceramic tile floors used in first-aid stations will show black scuff marks within a few hours if the first-aid station serves nearby machine shops.

Hard waxes which resist dirt and grease penetration are recommended for shop office floors. Note that such waxes may be quite slippery when newly applied. This condition can be minimized by buffing with steel wool pads.

Colored concretes, sometimes with abrasion resistant aggregates, are frequently used for mezzanine aisles and steps and for toilet room, locker room, and shower room floors. The staining resistance and corrosion resistance of such floors to any materials or liquid solutions expected to be encountered should be investigated when the choice of color and floor materials is made. Reestablishing a pleasing appearance to stained or corroded floors can be a difficult problem.

It is recommended that the local soiling problems which may be encountered should be carefully considered when the color schemes for shop offices, toilet rooms, locker rooms and shower rooms are being developed. A plant-wide uniform color scheme may unnecessarily increase cleaning costs.

In planning and supervising all cleaning and sanitation operations a very important step is the development of a list of all operation details to be performed within each individual area. The performance frequency for each item should be assigned and the estimated or standard time allowance should be worked out for each item in order to establish the individual employee work burden and the number of employees required.

Typical cleaning frequencies for manufacturing area office, cafeteria, first aid station, rest room, locker room and urinal station installations are shown in the accompanying typical cleaning schedules. The frequencies shown are based on three shifts per day operation of the manufacturing plant and have been planned for a good quality appearance in all areas.

Production Machines and Equipment

In a tractor manufacturing plant the machine shop, fabrication shop, heat treating department, and assembly line operations require a variety of machine and equipment cleaning operations including the following:

Routine removal of sludge and contaminated coolants from precision grinders.

Routine removal of metal chips and turnings from machine tools.

Periodic cleaning of pits serving chip conveyors and similar equipment.

Routine removal of accumulated material from wet and dry type dust collectors.

Periodic cleaning of heat treat department cooling and quenching fluid systems pits and tanks.

Periodic cleaning of paint booths and associated pits and exhaust stacks.

Periodic removal of sludge from all types of industrial washing and degreasing equipment.

Periodic cleaning of centralized filtering systems for machine tool coolants.

Periodic cleaning of moving platform type assembly conveyors.

At Caterpillar Tractor Co. we remove sludge and contaminated coolant from individual precision grinders with a two-inch suction hose which discharges to a 500-gallon horizontal cylindrical tank mounted on an industrial platform type power truck which can be readily maneuvered through normal machine shop aisles. The collected sludge is stirred by a hand scraper before the suction hose is used.

Up to 15″ of mercury vacuum is produced in the tank by a compressed air venturi supplied by a portable air hose attached to any nearby compressed air outlet. The front end of the tank is equipped with a heavy rectangular hinged door assembly so arranged that the sludge deposited in the tank can be pulled into the sludge transporta-

tion bucket located in a pit. The front end of the tank projects beyond the truck bed so that when the sludge is pulled from the tank with a long handled metal scraper the receiving bucket will be adequately filled without additional work. The sludge transportation bucket is equipped with liquid tight lids which permits transporting the contaminated coolant in the same container. The vacuum tank is also equipped with a 2" liquid draw-off gate valve mounted beside the sludge removal door for convenient emptying of liquids from the vacuum tank.

Where a sufficient number of precision grinders are installed close together, a centralized coolant filtering and recirculation system is installed. These are traveling filter paper units which merely require the periodic installation of a new roll of filter paper and the removal of the discharged paper and sludge from the receiving bucket. The filter tanks, and precision grinders are steam cleaned once a year to remove surface accumulations of grinding sludge and to prevent bacterial contamination troubles.

The routine removal of metal chips and turnings from machine tools can be done by hand methods or by permanently installed centralized chip conveyor systems. If a machine installation is expected to be located in a given location for an appreciable length of time, and the chips and turnings can be fed into a single straight line conveyor, then such an installation can be expected to be a paying investment. The design of a chip conveyor will depend upon whether small chips or coolant wetted chips are to be handled. In drag chain conveyor systems the chain pressure on the chain guides at the change of direction points must be carefully evaluated in order to choose a design which will prevent undue wear in systems having long chains.

Where chip conveyors cannot have a completely leak proof trough installation, the conveyor pit will need periodic cleaning. Be sure adequate pit room is provided for both cleaning and conveyor maintenance operations. It is a natural tendency to make chip conveyor pits too small in order to lower the initial installation cost.

Manual Chip Removal

Where centralized chip conveyor systems are not available, the hand removal of chips and turnings presents a variety of problems. The most widespread problem results from the failure of machine tool manufacturers to provide for chip drainage within the machine enclosure. The machine cleaner thus is faced with a mixture of coolant and chips which cannot be removed from the machine without some coolant dripping on the floor. It is recommended that all machines using a coolant should contain a chip drainage shelf or compartment. In some cases this drainage shelf will need a non-slip surface for the machine operator to stand on during machine set-up operations.

Machine bases should be enclosed tightly to the floor to eliminate all possible difficult-to-keep-clean spaces. Benches, tool stands and cabinets should extend to the floor for the same reason. Hydraulic pump units and electrical control cabinets should not be installed

Typical Plant Cafeteria and Serving Kitchen Cleaning Schedule

(Three meals and three coffee periods per day)

	Daily Frequency
Sweep floor	6/1
Wet mop floor	1/1
Empty garbage can	3/1
Damp wipe shelves	1/5
Wash doors	1/5
Wash windows	1/5
Machine scrub floors	1/20
Wash walls	1/240

Typical First Aid Station Cleaning Schedule

	Daily Frequency
Sweep floor	3/1
Wet mop floor	3/1
Clean china lavatories	3/1
Service soap dispensers	3/1
Service tissue dispensers	3/1
Service paper towel dispensers	3/1
Wash footstools	3/1
Empty wastepaper	3/1
Clean toilet water closets	1/1
Clean water cooler drinking fountain	1/1
Service sanitary napkin dispenser	1/1
Empty sanitary napkin disposition receptacle	1/1
Clean mirrors	1/1
Damp wipe desks	1/1
Damp wipe tables	1/1
Wash chairs	1/5
Damp wipe locker tops	1/5
Wash doors	1/5
Damp wipe shelves	1/5
Paraffin toilet seats	1/5
Wash toilet booths	1/10
Machine scrub floors	1/10
Wash railings	1/20
Wash desks	1/40
Wash tables	1/40
Wash walls	1/120
Wash lockers	1/120

within inches of a machine base because this merely creates a dirt trap which cannot be readily cleaned. Coolant pumps and other equipment bracketed to a machine base should be either enclosed down to the floor, or mounted high enough above the floor to permit a push broom to pass beneath them. Compressed air lines and electrical conduits should be brought up out of the floor far enough away from the machine base so that a dirt trap is not created.

Stringy turnings are removed from machines with a finger type hoe or by a fork. Metal chips are removed with a shovel. We use liquid tight wheelbarrows or two-wheel carts for handling metal chips and turnings so that one man can conveniently dump the turnings into the transportation tubs which are set in pits at centralized points. Non-ferrous turnings are shoveled into lift-truck containers for special handling by the Reclamation Department.

Dust Collector Cleaning

The routine removal of accumulated material from wet and dry type dust collectors is an operation that is frequently neglected. For the most efficient operation of dust collectors the collected material should be removed frequently enough to minimize recirculation of solids within the dust collector. For the most effective operation of wet type dust collectors a scheduled removal of any locally deposited solids is necessary. The local deposition of solids in a wet dust collector is determined by both the characteristics of material being collected and the design of the dust collector.

Heat treating operations on ferrous metals produce iron oxide scale in varying particle sizes which must be periodically removed from the quenching fluid system pits and tanks. Quenching tanks should be designed to hold a reasonable volume of deposited scale in order to minimize production interruptions, and tank obstructions should be arranged to permit convenient cleaning of the tank. In some cases scale removal conveyors can be designed as a part of a quench tank. Sometimes the quench tank sides and bottom can be arranged for convenient manual dragout of the scale accumulations without emptying the tank.

The quench fluid cooling tower system hot well and cold well pits frequently act as settling tanks for finely divided scale which should be removed periodically so that the sludge will not harden into sufficiently large chunks that may plug quenching fixture jets. Provide for cleaning such pits when the pits are designed. Permanently installed metal ladders and amply sized entrance openings are very desirable.

Paint booths must have the paint spray residues periodically removed from booth surfaces, eliminator plates, exhaust fans and stacks, and from the water tanks of wet wall booths. All scrapers used in removing paint residues must be of non-ferrous, spark-proof materials to control the potential fire hazard. After the booth and eliminator plates are cleaned their surfaces should be coated with a material to minimize paint sticking so the paint residues can be easily removed in the next cleaning cycle.

(Continued on page 16)

Cleaning Schedule
Typical Rest Room—Locker Room

	Daily Frequency
Sweep rest room floor	6/1
Sweep locker room floor	3/1
Service rest room soap dispenser	6/1
Service locker room soap dispenser	3/1
Wash mirrors	1/1
Clean urinals	1/1
Empty waste paper receptacles	3/1
Clean and straighten janitors supply closet	3/1
Service tissue dispensers	3/1
Wet mop rest room floor	2/1
Wet mop locker room floor	1/5
Clean scullery sink	1/1
Clean toilet water closets	1/1
Wash doors	1/5
Dust lockers	1/5
Paraffin treat toilet seats	1/5
Wash toilet booth partitions and walls	1/10
Machine scrub floors	1/20
Wash toilet room tile walls	1/20
Wet wipe benches	1/10
Wash locker room walls	1/20
Wash lockers	1/120
Clean Bradley wash basins in toilet	6/1
Clean Bradley wash basins in locker room	3/1

Typical Urinal Station Cleaning Schedule
(Concrete floor—tile wall)

	Daily Frequency
Sweep floor	6/1
Wet mop floor	3/1
Clean china lavatory	6/1
Service soap dispensers	6/1
Straighten janitor supply closet	3/1
Clean scullery sink	1/1
Clean urinals	1/1
Wash mirror	1/1
Wash door	1/5
Wash tile walls	1/10
Machine scrub floors	1/10

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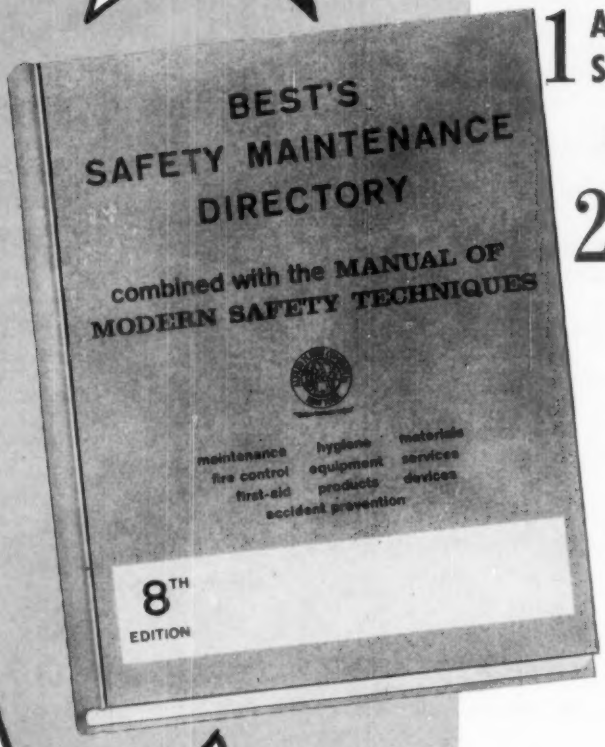

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Maintenance Tips

(from page 13)

Industrial parts washing machines and solvent degreasing machines also accumulate sludge in the bottom of their tanks. The tank cleaning frequency varies with the type and amount of contamination carried into the cleaning machines. Unfortunately too few parts cleaning machines are designed for convenient cleaning of the cleaning machine. The usual procedure is to transfer the cleaning solution to a holding tank or to the industrial waste sewer following which it is sometimes possible to remove a manhole plate through which the sludge sometimes can be removed. Too frequently it is necessary to disassemble the cleaning machine to remove sludge.

Moving platform types of assembly conveyors frequently accumulate excess oil and grease deposits on the underneath side. Roller conveyors handling greasing operations will also acquire deposits which need to be removed with a portable steam-detergent cleaning gun unit at infrequent intervals. These portable steam-detergent cleaning units are very useful for cleaning all types of machines and equipment which have accumulated a coating of grease and miscellaneous solids.

Cleaning of Manufacturing Areas

Heavy duty machine shop floors are conventionally surfaced with three-inch thick, end-grain, fir, creosoted wood blocks set in hot pitch or a cold setting emulsion compound. Keeping the surface of such floors clean where parts drip oily coolants is a difficult task. The oil content of these coolants soon creates a greasy floor surface difficult and unsafe for industrial lift trucks to travel over.

The usual way to clean greasy wood block floors is to remove the top surface of the floor block with a cutting machine. The resulting surface debris is then picked up with a power sweeper. Unfortunately the cutting machine removes slightly more material at the edges of the floor blocks thus creating a modified cobble stone floor surface. Thus it is obvious that floor cutting operations should be held to a minimum.

There is a real need for an industrial floor scrubbing machine which will detergent scrub wood floor blocks without leaving excess liquids on the top or between the floor blocks. This same machine would also be expected to do a good job of scrubbing concrete or wood block floors which may contain conveyor car tracks and industrial railroad tracks.

Floor areas around machines, benches, and cabinets must be hand swept. On wood block floors stiff fibre bristle brooms of both straight and push types are used. Wherever practical the hand swept debris is pushed into an aisle where it is picked up by the power sweepers which clean the aisles.

In locations such as the foundry where dry dusty debris is removed a self-powered heavy-duty combination vacuum and mechanical type industrial sweeping machine is used.

The general appearance of a manufacturing area can be improved by providing an ample number of waste paper barrels of a color distinguishable from tote boxes or other normal materials containers. These barrels should be kept painted so they will not look like junk. In addition a constant reminder program by plant supervision helps to get soft drink cups and candy wrappers placed in the waste paper barrels.

In the case of the author's company the waste paper barrels are emptied into a hand truck by a janitor who after following a definite route then empties his hand truck into large plant transportation containers located throughout the plant. Each waste paper barrel is lined with a coarse netting bag in which the paper remains until final disposal. This method minimizes waste paper littering of plant areas by the wind.

Follow Scheduled Program

Neat appearing factory areas are difficult to achieve without aisle line markings. We follow a scheduled program in repainting our 5" wide aisle marking lines by the use of a hand propelled self-powered air spray gun line painting machine. We use a commercial yellow traffic line paint. The same equipment and paint are used for marking street crossings, parking areas and outside storage area aisles.

Roadway and External Area Cleaning

A variety of equipment is available for cleaning the streets, sidewalks, driveways and paved storage areas of the author's company. This equipment includes street sweepers, industrial sweepers, hydraulic drive rotary brooms mounted on farm type tractors, end loaders, dump trucks and hand cleaning equipment which is utilized in the most convenient combination for each area to be cleaned.

Waste paper is removed from lawn areas by hand pick-up, but hand cleaning of external areas is minimized in favor of more effective use of the power sweeping equipment.

Disposal of Housekeeping Wastes

From the foregoing discussion of industrial housekeeping activities it is obvious that a wide variety of waste materials must be disposed of in an industrial plant.

In our company iron and steel chips and turnings are delivered to large transportation tubs set in pits which are located in an overhead crane bay through which runs the industrial railroad system. The filled tubs are placed on the industrial railroad cars at regular intervals, and an empty tub is replaced in the pit. Where metal chip conveyor systems are used they are arranged to discharge to several of these tubs by repositioning the discharge chute. The industrial railroad system delivers the metal chips and turnings to the Reclamation Department which briquettes both cast iron borings and steel turnings for use in the company's foundry. Surplus turnings are sold.

Non-ferrous metal turnings are kept segregated in each plant area and are subsequently shipped in special metal tote-box containers to the Reclamation Department which accumulates such materials for commercial sale.

Miscellaneous metal scrap materials are collected in local plant areas in metal tote-box containers which are shipped to the Reclamation Department for sorting and

(Continued on page 56)

safety in handling high energy fuels

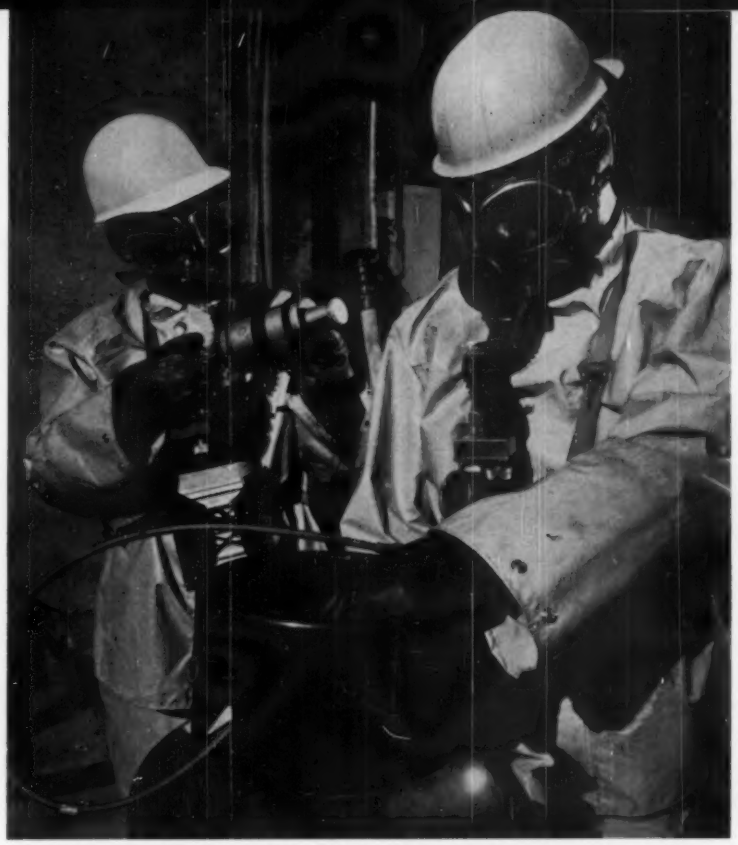
Before The Marquardt Corporation began using high energy liquid fuels in its testing operations at Van Nuys, California, extensive safety measures and a special training program were put into effect.

Since some of the fuels are highly toxic and in some cases will ignite spontaneously, Marquardt insisted that every possible means of protection be afforded test personnel. Various types of safety equipment and techniques were checked for compatability and integrity prior to firming up its program. This program has enabled the fuel-handling group to operate without a lost time injury.

Special Training

Marquardt instituted an initial training program for 60 employees who are directly engaged in the fuel handling operations. These employees, and some 90 others who may come in contact with fuel handling in any way, receive a specific physical examination and are re-examined every six months.

The training program includes ten, one-hour classroom sessions and concludes with a field demonstration. Employees are told exactly what to do in case of an emergency and all problems involved in handling the fuels are explained and discussed. The field demonstration shows the effect of various fire fighting materials and techniques on special fuel fires.



High energy fuel handlers at the Marquardt Corporation, Van Nuys, Calif., are well protected against toxic vapors while transferring fuel from delivery cylinders to test fuel system. Employee at the left is using a boranes-in-air detector to check for toxic concentration of fuel vapors. Both workers are wearing bump caps, gas masks, safety gloves and suits of vinyl-coated nylon.

Protective Equipment

In addition to the training program, Marquardt has specified adequate personal protection measures to safeguard fully the employees who actually handle the fuel from storage to the test fuel system. Special equipment for personal protection and for detection of toxic concentrations of fuel vapors were procured.

Fuel handlers wear special suits made of vinyl-coated nylon. In addition to being resistant to fuels handled by Marquardt, the suit is both acid and fire-resistant and is not affected by extreme changes in temperature. A flexible inner cuff enables the wearer to remove the suit while wearing gloves. It is easily sterilized or decontaminated.

Fuel handlers are also equipped with gas masks and bump caps. Marquardt engineers have designed a special fitting on the gas mask hose which enables the wearer to shift quickly from supplied air to a gas mask canister.

Supplied air systems are available at the fuel transfer site and in the test areas. If a fuel handler enters an area where an air system is not available, he can attach his gas mask hose to the canister in a matter of seconds. The gas mask canister is used while making adjustments in the test cells where work space is limited.

Fuel handlers use a new boranes indicator which detects and measures toxic concentrations of boron hydrides in the air. The detector is a colorimetric spot-test type instrument equipped with a positive displacement pump which draws air samples through freshly-impregnated filter paper. The index of borane concentration is determined by the number of pump strokes necessary to develop a color on the filter paper which matches a reference standard.

Equipment Maintenance

After use, all the special safety equipment used in fuel handling is brought to a maintenance area where it is sterilized, inspected and sealed in plastic bags for reuse. In addition to the special safety equipment for fuel handling, Marquardt also uses oxygen generating units and self-contained oxygen sling masks at strategic locations.

Picture by courtesy of Mine Safety Appliances.

Another Injury Checked

Friday the 13th Foiled

It happened to be a Friday, the 13th, but it might have happened on any day. It really didn't matter whether the day was "unlucky" or not, because this victim of an accident had the foresight to save his sight.

A welder for the Humble Oil & Refining Co., A. J. Harper, was merely walking past one of the company's phenol plants. From out of nowhere a solid object struck the right lens of his safety glasses, cracking it severely. However, the lens frame kept the pieces of the lens in place and Harper's eye was not injured in any way.

"Safety glasses are fairly hard to break, so whatever it was that hit the lens with force enough to crack it surely would have caused severe damage to my eye," Harper commented. "Fortunately, I made a resolution long ago to wear safety glasses all the time in the refinery. Looks like the resolution paid off."

Picture by courtesy of Humble Oil & Refining Co.

Correspondence Course In Safety

The Industrial Safety Association of Iowa announces that it will again make available the "Industrial Safety Correspondence Course" through Engineering Extension of Iowa State University, Ames, Iowa.

The course was developed by the Safety Association at the request of Iowa Industry several years ago. It has been enthusiastically received by many Iowa industries as well as enrollees from 18 states and Alaska and Trinidad.

The course is designed to train supervisory personnel, in any plant, in the fundamentals of industrial safety and their application. Enrollees have come from large and small plants as well as from insurance companies and the armed forces. Large plants have used the course to supplement their supervisory personnel training program. Smaller plants have used it to train selected persons in safety principles and their application in establishing or advancing a safety program in operation.

Officials point out that enrollment is not confined to Iowa, but special emphasis is being placed this year to encourage all Iowa plants to take advantage of the training the course offers.

The course is based on the text, "Industrial Safety," by Roland P. Blake, Chief Safety Engineer, United States Department of Labor. A complete course of study with 12 lessons, assignments, grading of papers and the issuance of a certificate of achievement upon satisfactory completion of the studies.

Information Available

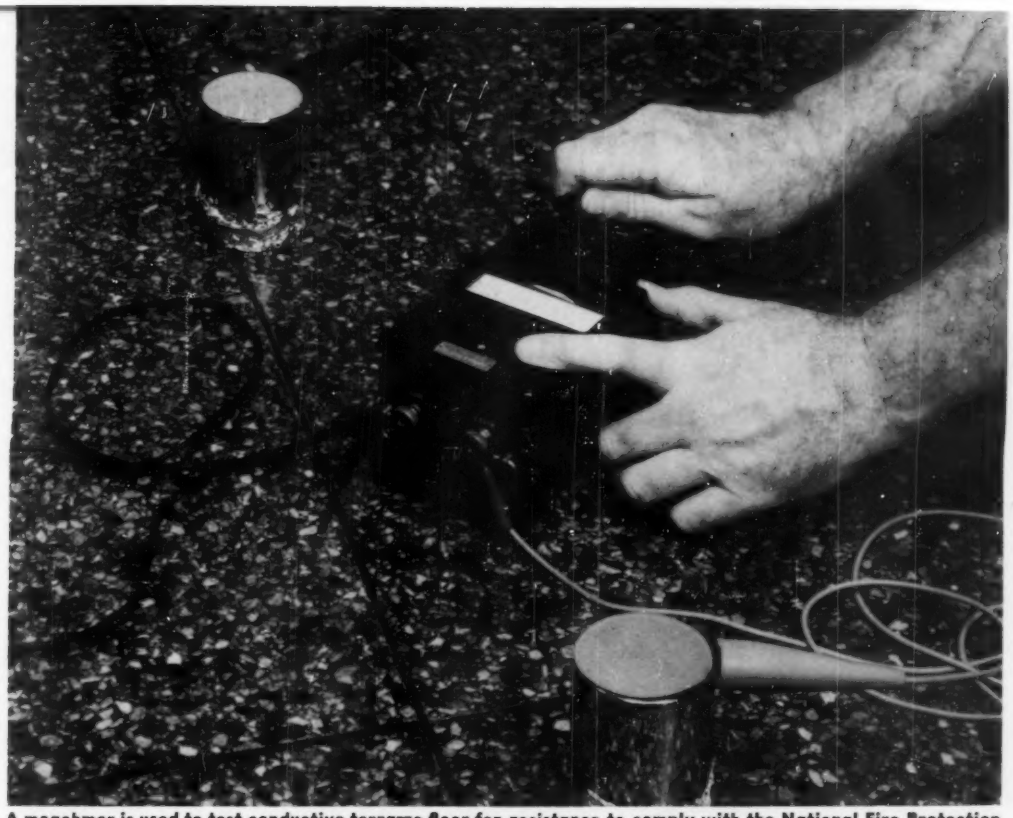
Interested persons may obtain complete information regarding the course from: Engineering Extension, Iowa State University, Ames, Iowa; or from the Industrial Safety Association of Iowa, 611 Central National Building, Des Moines, Iowa.

Solvent Survey

ASTM Committee D-26 on Halogenated Organic (Cleaning) Solvents reported at ASTM Committee Week in Chicago that a survey of some 600 companies gave the problems of vapor toxicity and flash point the highest priority of matters needing attention in the field of cold cleaning. Both petroleum and halogenated solvents are involved, either straight or in mixtures. The survey showed the following items to be of interest, in the order listed: Vapor toxicity, flash point, evaporation rate or drying time, residue, corrosiveness, boiling point or range, solvent action on insulation, electrical conductivity, dermatitis, odor, cleaning ability, specific gravity, explosiveness of vapors, refractive index, acidity or alkalinity, and color.

The test methods subcommittee, taking its cue from the expressed interests of industry as shown by the survey, is concentrating its efforts on tests for properties near the top of the list. Present ASTM methods will be reviewed for applicability. The cold cleaning subcommittee, which conducted the survey, will establish criteria for use of solvents so as to provide a basis for meaningful test methods.

The vapor degreasing subcommittee is preparing a manual on use of solvents in vapor degreasing, which will also provide a basis for test methods.



A megohmer is used to test conductive terrazzo floor for resistance to comply with the National Fire Protection Association Code #56. This instrument is used to check other conductive floorings, linoleum, vinyl and rubber.

Is Your Conductive Floor Really Conductive?

For years a conflict of ideas has clouded the subject of conductivity in hospital operating rooms, ordnance depots, industrial plants and chemical laboratories. Just how valuable are conductive floors?

These floors are **vital** in any area where materials or chemicals may be ignited by an electrostatic spark. Vital to the lives and general well-being of personnel working in the danger areas and, in the case of hospitals, to patients as well. Vital to the stability and administration of the building involved, since an explosion would disrupt its services or production, rob it of skilled employees. Vital to the very economy of the plant or hospital, because of expensive law suits which inevitably follow on the heels of accidents. Even if you're adequately covered against all losses, you'd be paying the bill ultimately in adjusted insurance rates.

Conductive floors have been or are being installed in the operating rooms of the vast majority of accredited hospitals. More and more industrial executives, too, have become aware of the urgent need for this type of protection. The question is: **Are their conductive floors protecting them?**

The prime hazard in the realm of conductivity is **the conductive floor which is not functioning.** Where such floors have not been installed, most employees, through a smattering of education or osmosis, have become alert to the inherent dangers. They have, as a result, developed certain safe working habits.

False Security

Once the floor has been installed, personnel are inclined to become lax, relying upon the new "gimmick" to protect them. If, for any of a variety of reasons, the floor loses its conductivity, these human beings are in greater jeopardy than ever. A faulty conductive floor is, thus, more dangerous than no such floor at all!

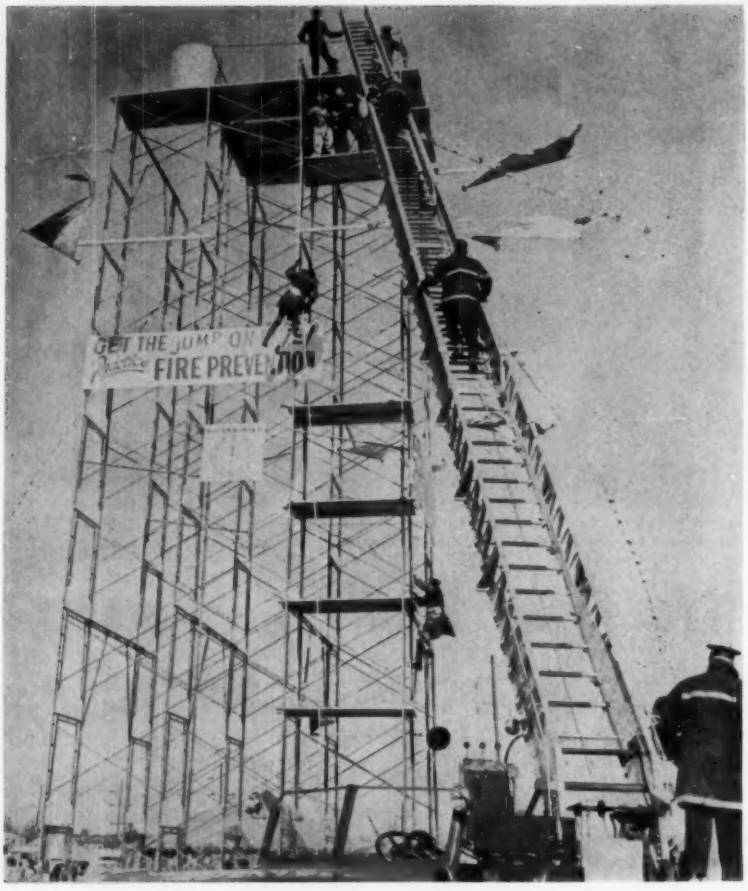
A major cause of conductivity loss is the use of improper maintenance materials. Polishes and cleaners not specifically designed to retain conductivity will gradually build up an insulating film. Resistance rises slowly, eventually reaching infinity.

Wax carried on to the surface of a conductive floor by mobile equip-

(Continued on page 22)

by **WALTER G. LEGGE**
President of Walter G. Legge Company, Inc.
Director of Greater New York Safety Council

A SAFETY IDEA



Fire Department Drill Towers

An economical new method of building up portable fire department drill towers for both training work and public demonstrations has been developed from tubular steel scaffolding used for the construction trades. The same equipment is now proving valuable to fire departments because of its rigid construction, ease of assembly and dismantling, versatility, safety and availability.

A typical example is shown in the above photo. Taken at the Texas State Fair, the photo illustrates a 52-ft. drill tower erected for public information activities of the City of Dallas Fire Department. The department used the tower to demonstrate its modern fire fighting methods and rescue operations.

The tower parts can quickly be assembled without tools into drill towers of virtually any height and base area, with offsets, set-backs, spanning members, guard rails, locking casters and other design details as required.

Frames are available in a range of sizes to permit locating platforms at any desired levels. All parts are designed for safe one-man handling at any height. Parts are completely interchangeable. The parts may be stacked closely for transportation and compact storage.

Picture by courtesy of Safway Steel Products, Inc.

Container Institute

The formation of an Industrial Container Institute in The Society of the Plastics Industry, Inc., was recently announced by Jerome S. Heisler, newly elected Institute Chairman and Vice President, Delaware Barrel & Drum Co., Inc., Wilmington, Del. Other Institute officers include B. Neal Harris, Jr., Institute Vice Chairman and Vice President of Hedwin Corp., Baltimore, Md.; and Richard S. Griffith, Chairman, Institute Specifications Committee, and Assistant Product Manager, Industrial Containers of the Plax Corp., Bloomfield, Conn.

Present company members of the Institute include: Air Form Products, Nashua, N. H., Delaware Barrel & Drum Co., Inc., Hedwin Corp., Plax Corp., Vanguard Plastics, Inc., Freehold, N. J., and Woodall Industries, Inc., Franklin, Ohio. This new SPI division is comprised of manufacturers of industrial plastic containers in the U.S.A., representing approximately 95 per cent of all industrial plastic container production in the country.

Scope of Interest

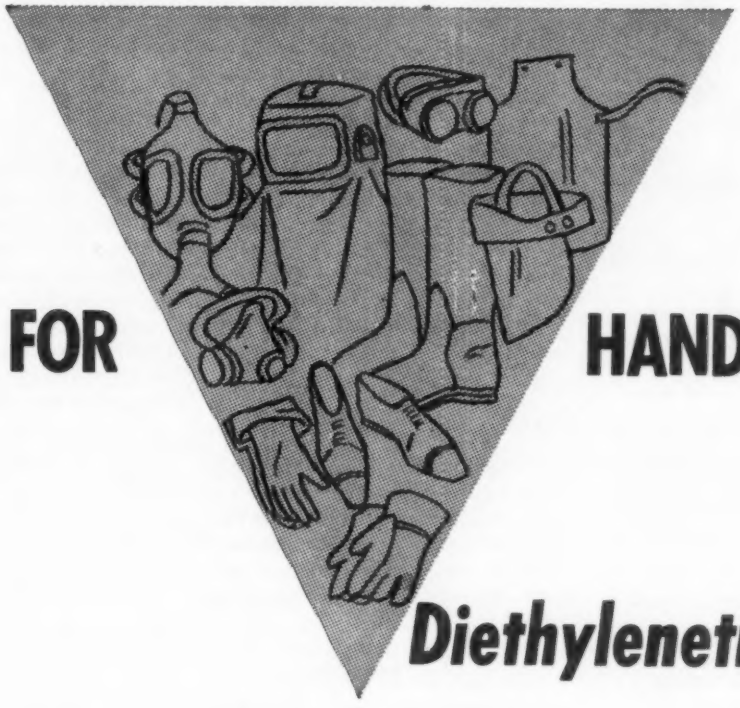
This group of plastic container manufacturers is concerned with plastic containers of one-gallon capacity and larger. It is not to be confused with the Plastic Bottle and Tube Manufacturers' Institute which is also a division of SPI but which deals exclusively with plastic bottles and tubes in such fields as detergents, cosmetics, disinfectants and so forth and which are of smaller capacity.

Molded plastic containers in industrial applications are being accepted at an increasing rate by industry and government because they can ship safely and efficiently many corrosive, sensitive and toxic products. These plastic containers, because of their lightness, inertness, resistance to breakage and nontoxicity, are currently being used for such products as acids, atomics, foods, pharmaceuticals, photographic chemicals, cosmetics and many other such products.

Company members of the Institute will be initially concerned with

(Continued on page 47)

SAFETY EQUIPMENT



FOR HANDLING—

Diethylenetriamine

The following personal protective equipment should be used, when indicated, for protection against diethylenetriamine:

Chemical Safety Goggles: Cup-type or rubber framed goggles, equipped with the approved impact resistant glass or plastic lenses, should be worn whenever there is danger of diethylenetriamine coming in contact with the eyes. Goggles should be carefully fitted to ensure maximum protection and comfort.

Spectacle-type Safety Goggles: Metal or plastic safety spectacles with unperforated side shields which can be obtained with prescription safety lenses or suitable all-plastic safety goggles may be used where continuous eye protection is desirable, as in laboratories. These types, however, should not be used where complete eye protection against diethylenetriamine is needed.

Face shields: Plastic shields (full length, eight inch minimum) with forehead protection may be worn in addition to chemical safety goggles where complete face protection is desirable. Chemical safety goggles should always be worn as added protection where there is danger of material striking the eyes from underneath or around the sides of the face shield.

Respiratory Protection

Severe exposure to diethylenetriamine may occur in tanks during equipment cleaning and repairs, when decontaminating areas following spills, or in case of failure of piping or equipment. Employees who may be subject to such exposures should be provided with proper respiratory protection as described below:

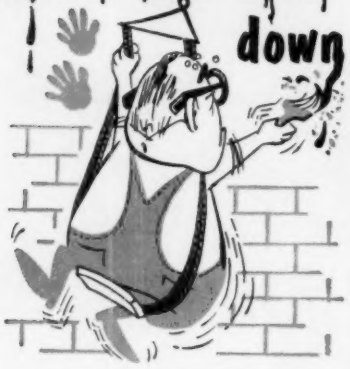
Note: Respiratory protective equipment must be carefully maintained, inspected, cleaned and sterilized at regular intervals, and always before use by another person.

a: Self-contained Breathing Apparatus which permits the wearer to carry a supply of oxygen or air compressed in the cylinder, and the self-generating type which produces oxygen chemically, allow for greater mobility. Cylinder oxygen should not be used in tanks or other confined spaces.

b: Positive Pressure Hose Masks supplied by externally lubricated blowers. Since these masks depend on a remote air supply, they should be used only where conditions will permit safe escape in the event of air supply failure. Care must be taken to locate the blower

The accompanying article is from "Chemical Safety Data Sheet for Diethylenetriamine" published by the Manufacturing Chemists' Association, Inc. The complete data sheet, in addition to this information on personal protective and fire fighting equipment, covers the properties, hazards, engineering control, employee safety, handling and storage, tank and equipment cleaning and repairs, waste disposal, medical management, and first aid. Copies of the complete data sheet (SD-76) are available for 30¢ from: Manufacturing Chemists' Association, Inc., 1825 Connecticut Ave., N.W., Washington 9, D. C.

The case of the Bo's'n's Swing that Wore the Man down



It wasn't the work...but trying to do the work in an ill-fitting, non-adjustable Bo's'n's Swing that wore down old Sam before quitting time. To work efficiently, the man must have perfect balance... that means the harness must fit the man.

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*Optional at extra cost.

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(Use Key # R-4 on Inquiry Card on page 1)

air source in an area which is free of air contaminants.

c: **Air-line Masks** supplied by compressed air are suitable for use only where conditions will permit safe escape in case of failure of the compressed air supply. Such masks should be used only in conjunction with a suitable reducing or demand type valve, excess pressure relief valve, and filter. Externally lubricated compressors are preferred for air supply. If plant compressed air is used, it should be checked frequently to make certain that harmful gases from the decomposition of the lubricating oil used in the compressor, or impure air supply, are not present.

Head Protection

"Hard" hats should be worn where there is danger from falling objects. If hard hats are not considered necessary, soft brimmed hats or caps may be worn to give protection against liquid leaks and splashes.

Foot Protection

Leather or rubber safety shoes with built-in steel toe caps are recommended for workers handling drums and other heavy containers of diethylenetriamine. Rubbers may be worn over leather safety shoes. Rubbers and shoes should be thoroughly cleaned and ventilated after contamination.

Body, Skin & Hand Protection

Sustained or intermittent skin contact with liquid diethylenetriamine may produce marked irritation at the site of contact. It is imperative that contaminated clothing be removed promptly and laundered before re-use. Affected areas of the body should be flooded with liberal quantities of flowing water. As a general hygienic measure, facilities for personal cleanliness should be provided and washing before lunch and at the end of the work day should be encouraged.

Skin contacts with the liquid which are not great enough to cause immediate irritation may cause skin sensitization. If persons do become sensitive, contact so small as to be nonirritating will surely trigger the allergic response.

Clothing made of rubber or other impervious material may be worn to protect the body against diethylenetriamine splashes. These garments must be cleaned inside and out each time they are used.

Fire Fighting

Water can be used to control and extinguish fires involving diethylenetriamine. A fine spray of water is very effective in extinguishing the fire and dispersing the vapors. Dry chemicals and carbon dioxide are also suitable extinguishers. Fire fighters should wear normal protective equipment, waterproof coats, boots, goggles and helmet. When fighting indoor fires, self-contained breathing apparatus is necessary. Outdoors this apparatus should be available and worn if needed.

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Conductive Floor

(from page 19)

ment or on the soles of shoes can do similar harm. Spilled surgical talcum or disinfectants can insulate the floor. Possible causes are numerous.

Floors which rely on in-built metal grids for conductivity offer very real problems. Metal grids have no resistance. Consequently, they act as live wires if shorts occur. Frightening as it is to contemplate, the danger of electrocution exists.

Take Regular Resistance Readings

Insufficient training of personnel charged with the responsibility of maintaining conductive floors contributes to the hazards. For this, management must take the rap. Guidance from the executive offices is mandatory if superintendents and cleaning crews are to comprehend the magnitude of what is still a largely misunderstood concept. In some buildings, the necessity for frequent resistance readings is overlooked. It has happened on occasion that a floor has ceased to function with no one knowing about it!

Manufacturers of conductive flooring are cognizant of the importance of proper maintenance pro-

cedures and materials in retaining the full operating benefits of their floors. They are quite specific in their recommendations for keeping electrical resistance within allowable limits of NFPA CODE #56.

Specialist Needed

The National Fire Protection Association in Boston will gladly provide management with sufficient copies of NFPA CODE #56 for distribution among responsible personnel. The services of a specialist should also be secured. Such an expert can conduct training classes for department heads and maintenance people. It should be his job to familiarize all concerned with the full requirements of the NFPA and other local codes, as well as to train personnel in proper practices.

Resistance readings of various parts of the floor should be taken at regularly scheduled intervals. Readings should be entered in a log book for ready reference. When a rising or falling of resistance is noted, corrective measures should be instituted immediately.

Important Safeguards

Additional safeguards are necessary. For example, all mobile equipment should be equipped with conductive castors or tires. These must be kept clean to avoid accumulations of insulating film which would prevent contact with the conductive floor. Conductive rubber tips should be used to ground stools, stands and stationary equipment to the floor.

Personnel working in the hazard zone should wear conductive booties, shoes or other acceptable grounding devices which will drain electrostatic charges from their bodies to the floor.

The installation of gas-proof electrical outlets, sealed electric motors, vibration-proof lighting fixtures and other precautionary measures are clearly defined in NFPA CODE #56.

Is it worth the effort? Consider this: a single spark in the presence of gases, vapors, dusts or other combustible materials could **wreck** your building!

Picture by courtesy of Walter G. Legge Co., Inc.

Edited by HENRY M. GROSMAN
Counselor at Law, Newark, N. J.

MEMBER . . . . . .
Master Superior Court, New Jersey
American Bar Ass'n, New Jersey Bar Ass'n,
Chairman, Committee on Workmen's
Compensation, New Jersey Bar Association
National Federation Insurance Counsel
Past Commander, American Legion, Post 10,
. . . . . Newark, N. J.

PRE-EXISTING DISABILITY—Aggravation—Accident in Course of Employment

Although the medical testimony was conflicting, there was substantial medical evidence that the disability for which the award had been made was causally related to the claimant's accident at work. The claimant, a waitress, while carrying a heavy tray of food down one step to the dining room, felt a sharp pain in her back and had to have assistance in setting the tray down on a stand. She was off work for one week. The court held that she suffered a pre-existing pathology, and that the award was based upon an aggravation thereof due to the accident. Affirmed.

Lindsey vs. Nowrocki, d/b/as Hedges Nine Mile Point Hotel; New York Supreme Court, Appellate Division, Third Judicial Department. No. 1917. December 10th, 1959.

DEATH BENEFITS—Suicide—Causal Connection—Medical Testimony

The decision awarding death benefits to the decedent's widow was affirmed inasmuch as there was substantial medical testimony supporting the board's finding of causal relationship between the decedent's injuries and his suicide. On December 13, 1958, in the course of his employment the decedent had an automobile accident, was rendered unconscious and was hospitalized. He received a cerebral concussion, a shiplash injury to his neck and contusions to his knee, leg and elbow. He was placed in traction and suffered severe headaches while in the hospital. At home, he complained of ringing in his ears, severe headaches and was in a depressed condition. On the morning of December 22nd, 1958, he shot himself. The board found that the decedent was happily married, had a new home and had recently been promoted. Three doctors testified that the decedent sustained a serious brain injury which resulted in a catastrophic emotional change which was characterized as a severe depression and that this caused the decedent to commit suicide. Affirmed.

Anderson vs. Armour and Co.; Minnesota Supreme Court. No. 149. February 5, 1960.

MENTAL CONDITION—Death By Suicide—Casual Connection With Accidental Death During Course of Employment

Although no compensation shall be paid if the disability or death is due to an intentional self-inflicted injury, if the proof shows the employee's insanity or mental derange-

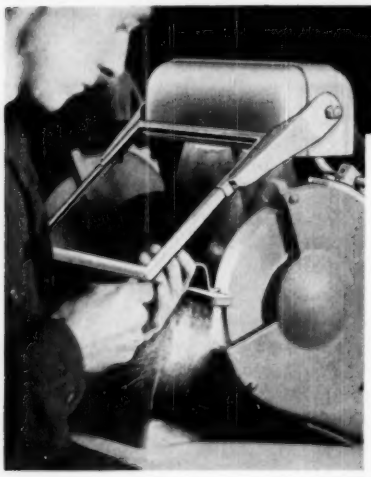
ment due to an accident was of a degree that he killed himself while possessed of an uncontrollable or irresistible impulse without rational knowledge of the physical consequences of his act, his death is compensable. The decedent, a truck driver, while in the course of his employment, ran into a pedestrian. The impact threw the pedestrian about 80 feet, causing injuries to him but none to the decedent. After this incident, the decedent became quite nervous, expressed concern about the accident with some customers, and later, took his own life by slashing his wrists and plunging a boning knife, which he had taken from a locker plant where he had made a delivery, into his heart. The court rejected the defendant's contention that the commission erred in failing to find that the claimant's death was intentionally self-inflicted, and in awarding compensation to his dependents. The court found that there was sufficient evidence in the record on which the commission could find that the decedent sustained an accident arising out of and in the course of his employment. Affirmed.

Cackett vs. General Accident Fire & Life Assurance Co.; New York Supreme Court, Appellate Division, 3rd Judicial Dept. No. 1329, Nov. 13, 1959.

STATUTE OF LIMITATIONS—Time of Injury or Time of Disability

An electrician who injured his back in 1953 and, after three weeks' hospitalization, continued working with some pain until December, 1958, was not barred by the statute of limitations from bringing action for industrial injury. The insurance carrier denied compensation benefits upon the ground that his difficulty resulted solely from the 1953 injury and the lapse of time barred his claim. This applicant performed heavy manual work and his doctor stated that the nature of his work led to the final rupture of his back. While a succession of slight injuries in the course of employment may not in themselves be disabling, their cumulative effect in work effort may become a destructive force. The fact that a single but slight work strain may not be disabling does not destroy its causative effect; in combination with other such strains, it produces a subsequent disability. In reality the only moment when such injury can be visualized as taking compensative form is the date of last exposure, when the cumulative effect causes disability. The court concluded that, since the accumulated strain of work effort caused the electrician's pre-existing back condition to become disabling in December, 1958, the claim was not barred by the statute of limitations.

Beveridge vs. Industrial Accident Commission; California District Court of Appeal, First District, Division One. No. 18, 841. November 25th, 1959.



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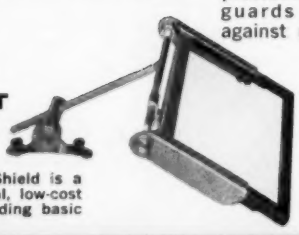

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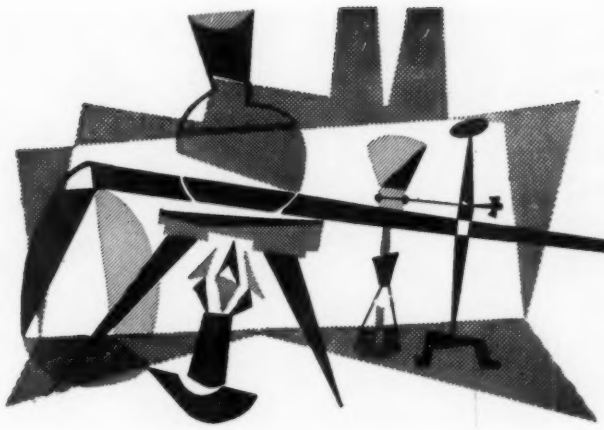
(For details, use Key # R-5 on card on page 1)

NSSA to Convene

The National Sanitary Supply Association will hold its 37th annual Convention and Merchandise Exhibition at the Fontainebleau Hotel in Miami Beach, Florida, May 22–25. Close to three-hundred booths will show the latest in sanitary supplies, chemicals and equipment; a record attendance of members will glean all possible knowledge of new products and methods in the sanitary maintenance field.

A Convention feature will be the start of a new sales and business management training program for members of the Association. President Shim D. Lehrman will preside at the meetings and new officers and district directors will be elected to serve for the coming year. Executive Vice President Leo J. Kelly will give his annual report on the activities of the Association.

The exhibition hall will be open Sunday, May 22nd through Wednesday, May 25th. Attendance at both the exhibitions and convention is limited to members of the National Sanitary Supply Association, and to those eligible who wish to join the N.S.S.A. at the Convention.



industrial hygiene

Rescue Breathing Booklet

Rescue breathing, the use of a person's breath to revive someone who is unable to breathe for himself, is the subject of the N. Y. State Health Department's publication, "Rescue Breathing."

The booklet is designed to teach lay audiences the fundamentals of the simple, but effective rescue breathing procedure, according to Dr. Herman E. Hilleboe, State Health Commissioner. "The method is so simple that almost anyone, including a child, can learn it and use it effectively. While rescue breathing is the oldest method of resuscitation, it is also the most effective method," he said.

The improved technique of rescue breathing was perfected at the Roswell Park Memorial Institute, Buffalo, the State Health Department's cancer research facility. The booklet was prepared by the Department's Office of Public Health Education.

Among the organizations now recommending the method are the American Red Cross, American Medical Association, American Society of Anesthesiologists, National Academy of Sciences, Medical Society of the State of New York and the Empire State Rescue and First Aid Association.

The publication describes the method and illustrations are used to show each step in the procedure. The booklet discusses rescue breathing for infants and children, adults and drowning victims.

Dr. Hilleboe listed among the advantages of rescue breathing:

The victim does not need to be moved or placed on the ground.

Rescuer can get oxygen to the victim's lungs faster than by any other known emergency method of artificial respiration.

Both of the rescuer's hands are free to keep the air passage open.

Rescuer sees, feels, and hears effect of each inflation.

Small rescuer can breathe for large victim.

Rescuer can continue for several hours without exhaustion.

"Anyone may, at some time, be called on to help revive a person who is unable to breathe for himself," Dr. Hilleboe said. "Your New York State Health Department has prepared this simple training booklet so that you will be able to know how to perform a service which may mean the difference between life and death."

Copies of the new publication are available without cost to residents of New York State from the Office of Public Health Education, New York State Health Department, 84 Holland Ave., Albany 8, or from city, county or district health offices.

Radioactive Contamination of Groundwater

More than 12 years of research effort have been spent in studying the behavior of radioactive wastes in the ground and groundwater at the Hanford atomic energy plant, Richland, Wash., U. S. A.

This time and effort is essential in the relatively new and growing atomic industry to further the general knowledge of waste behavior, decrease disposal costs, and continue increasing the safety factor, according to R. E. Brown in a talk at the Conference on the Disposal of Radioactive Waste, held in the European principality of Monaco recently.

Brown, a senior geologist in the Hanford laboratories chemical effluents technology operation, and two other General Electric scientists from Hanford, Dr. D. W. Pearce and J. F. Honstead, were invited by the Atomic Energy Commission to speak at the international conference.

Brown emphasized that all disposal of radioactive liquid wastes to land ultimately, if not immediately, relies on the geologic environment. This is true whether wastes are discharged directly to the ground as liquids at shallow depths or great depths as has been proposed, evaporated to dryness and buried as a solid, or stored in tanks.

Geologic and groundwater appraisals must be more precise and exact for radioactive waste disposal than in almost every other field of geologic application, because of the potential hazards involved, Brown explained.

An area of about 2,000 square miles in the Pasco Basin is being studied for geologic and groundwater

(Continued on page 34)

This official U. S. Navy photograph shows food cart which serves the various shops at Portsmouth Naval Shipyard.

Vending machines like these can provide workers with nutritious snacks at a number of locations within the plant.

NUTRITION AND THE INDUSTRIAL

Nutrition, the science of food and its use in the body, is one of the most important factors in the health and morale of industrial workers. Those who understand and use this science in their every-day life may live longer and enjoy better health, for how they feel depends upon the foods they eat more than any other single component of health.

Food as a Health Factor

Food, one of the key factors in the maintenance of good health, has three functions (a) to furnish the body with materials from which to produce heat, work or other forms of energy; (b) to enable it to grow or to repair tissues subject to constant wear and tear; (c) to supply regulators of the bodily functions. Foods are frequently separated for purposes of discussion into these three groups—energy producers, body-builders and regulators. However, these dividing lines are not very rigid and considerable overlapping occurs.

The energy producers include nearly everything that could be called food. Chemically, those foods that contain the largest amounts of fats (butter, lard, dripping oils) or of carbohydrates (starches and sugars) are the chief energy producers. Less important as energy producers are proteins.

Energy value is measured in calories. The number of calories required depends on age and size, and on the work being done. A man at complete rest still expends some energy in maintaining body temperature, breathing, and so on. This may be called his "basal energy requirement," which is a fairly constant figure of about 1,400 to 1,800 calories in 24 hours. Food must provide calories in excess of this basal energy requirement if work is to be done, and up to a certain point, as the food calories increase, so does the amount of work that can be done. Similarly, as the food calories are reduced to basal levels, less work can be done. It has been estimated that, on the average, moderately hard work requires about 1,500 calories above basal needs.

Normal growth and repair require body-building foods like the proteins and certain minerals, e.g. calcium, phosphorus and iron. Without sufficient of these there is a stunting of growth, loss of weight, fatigue, bad teeth and possibly also anaemia with its profound effects on general well-being.

The regulations of bodily processes is accomplished by the action of many substances. Some of these are not made in the body from simple substances and must therefore come from foods; these are the minerals and vitamins which are essential for life but needed in very small quantity.

Significance of Nutrition in Industry

The significance of eating the right foods must be expressed in industrial terms before the full importance of nutrition can be realized.

The importance of nutrition in relation to physical fitness and absenteeism is difficult to assess because both these terms cover a variety of factors. Physical efficiency includes such factors as fatigue, training, skill and habit. It is reflected inversely in industry by accidents, spoilage or inaccurate and unacceptable work and by decreased production. Absenteeism is explained in different ways by different people; the safety supervisor, the psychologist, the lighting engineer, each accounts for absenteeism in his own way.

It is important to remember that absenteeism results from many different causes and is only partly due to illness. However, the other causes of absenteeism may

Cafeterias offer a satisfactory and efficient means of serving employees complete and nourishing hot meals.

WORKER

also be connected with nutrition, since nutrition has so many direct and indirect effects. For example, a lack of Vitamin B1 or thiamine, in the diet may give a man digestive disturbances that will keep down his production all day; or it may affect his nerves so that he picks a quarrel with his neighbour and puts them both off production; or it may affect the sensitivity of his fingers so that he spoils more pieces. Since the B vitamins tend to occur together, the man may also lack riboflavin which might give him sore, watery eyes in addition to the above symptoms, and this has been found to blur vision enough to cause an accident which no one would ordinarily attribute to a nutritional deficiency.

The Function of Nutrients

Each of the food elements, namely, carbohydrates, fats, proteins, minerals, vitamins, and water, may be considered separately for physical efficiency.

Exact facts and figures cannot be given but the inference is very clear in many cases. For example, the matter of calories is extremely important. It has already been pointed out that a certain amount of our food goes to supplying basal energy requirements and that work can be done only when the caloric intake is greater than these basal needs. Indeed, as the calories increase, up to a certain point, more and more energy can be expected in the form of work. Insufficient calories or just too long a time between meals may produce a general physiological effect of hunger, which, while not sufficient to cause pain, may cause irritability, weakness and diminished ability to concentrate, and so impair production and cause other difficulties.

While the general efficiency of the worker depends in part on the intake of a sufficient number of calories, the source of the calories is of particular importance in muscular efficiency. Some carbohydrates (starch or sugar) are necessary in the diet for proper functioning. On the other hand, excessive use of sugars in a diet which is relatively deficient in vitamin B1, may precipitate severe deficiency symptoms such as digestive disturbances. This is important in considering the type of food to be used in between-meal feedings. Where much work has to be done and the calorie requirement rises above 3,000 calories, it becomes more necessary to include a considerable amount of fat in the diet in order to provide calories from a concentrated food.

The notion that a high meat diet is essential for heavy work is not true in a physiological sense, although there may be reasons for increasing the amount of meat in the diet of certain workers. Muscular ac-

(Continued on page 31)

Table 1: Types of Feeding Facilities—

A LUNCH ROOM is the simplest provision management can make for in-plant feeding. It should be in an area set aside from the production area on the premises and should be attractively decorated, so that it will provide a restful environment. Tables, chairs, a refrigerator, sink, stove and small storage closet for dishes and utensils will be required.

FOOD VENDING MACHINES offering varieties of food, e.g., soup, coffee, ice cream, sandwiches, fruit, etc., are gaining in popularity. In some manufacturing plants these machines even serve up soup and a hot main course. The machines are scattered around the plant so workers don't have to go to the cafeteria.

FOOD TRUCKS OR CARTS are used to transport prepared foods from a central kitchen to the outlying areas of a plant. An industrial firm composed of many buildings spread over a considerable area will find a mobile food truck or cart indispensable to complete the food services for workers who cannot conveniently reach a centrally located cafeteria. A food truck or cart is particularly useful for serving mid-day refreshments during rest periods. In industrial plants located in metropolitan areas of large cities, industrial caterers utilize food trucks to service the plants which cannot afford the floor space for a permanent feeding facility.

A SNACK BAR is located where the food service is limited to juices, hot soups, sandwiches, desserts and beverages. It is used efficiently as the only feeding facility in a small plant or as a supplementary unit set up in outlying buildings of a large plant.

CAFETERIA SERVICE is the most popular feeding facility in industrial plants because it is a convenient way to serve and seat many in a short time. A cafeteria usually serves complete meals during lunch period and provides snacks during the mid-day rest periods.

This paper was prepared by a committee of the American Association of Industrial Nurses upon the recommendation and with the assistance of the AAIN Management Advisory Council.

A serious problem is confronting industry. Ninety percent of total absences from work are due to non-occupational illnesses and injuries. This lost time is steadily increasing the cost of medical and surgical benefit plans as well as the cost of operation.[1] Illness absenteeism has been considered by authorities in the industrial field to be ten times more costly than industrial accidents.

When industry assumed the liability for work connected accidents and recognized that injuries were wasteful and controllable through accident preventive efforts, industrial accidents significantly declined. In like manner, work interruptions related to illness can be controlled through health maintenance measures.

Savings in compensation costs directly associated with Industrial Health Programs, have been clearly demonstrated. A survey report comprising 262 industries made by the University of Michigan for the Public Health Service revealed that: *Analysis of the present data indicates that employers in machinery manufacturing and general merchandise retailing save enough in reduced Workmen's Compensation premium to pay the salaries of the doctor and the nurse, to say nothing of other possible savings in reduced absenteeism, reduced health insurance costs and greater over-all employee efficiency.*[2]

The major value of Industrial Health Programs, however, has gone far beyond the reduction of compensation losses. Modern preventive medical programs have expanded in scope to include all aspects related to employee health. These include the care of industrial illnesses and injuries, health counseling and education, plant sanitation, industrial hygiene and, in addition to preplacement physical examinations, periodic health evaluations with particular attention to job placement in terms of physical capacities and job demands. The appropriate scope of industrial health practice is aimed at early detection of incipient illness and early referral of conditions for definitive treatment and control.

This early detection enables the employee to be referred to his own physician at a time when such conditions are more amenable either to cure or control. The individual employee benefits, the private physician benefits, and industry benefits. By ethics and tradition, neither the industrial physician nor industry has attempted to interfere with the private practitioner or his management of cases of non-occupational sickness or injury.

However, because of the enormous expense and loss of productivity resulting from non-occupational sickness absence, the private physician should be urged to devote increased attention to his responsibility regarding the problem of sickness absence from work. There will be no reduction in the frequency and severity rates of non-occupational illness until the family physician realizes that he is the key figure in non-occupational absence control. In his own economic and professional interest, if for no other reason, it would seem advisable for him to devote increased attention to this problem.[3]

Decrease in loss of manpower and earning power can be achieved through the vigorous practice of preventive medicine, early detection of disease and health education for employees.

Increased Need for Health Program

In recent years, the need for Industrial Health Programs has greatly increased for various reasons:

- *There has been a broadening of the interpretation of Compensation Laws to cover aggravations of existing conditions and to include conditions which formerly were considered personal health problems. This has necessitated attention to total health of individuals for prevention of claims stemming from personal causes.*
- *Industry is paying a large share of the total national medical bills through Group Accident and Health and Illness Disability as well as Compensation Insurance. The only approach to prevention or control of losses associated with employee illness is health maintenance and control of abuses in this area. This is best accomplished by medical and nursing personnel, who have knowledge of disease prevention and who can interpret diagnoses and evaluate disability.*
- *There is an increasing awareness of the relationship of a person's health to job performance and safety.*
- *Securing and maintaining a stable and effective work force has become increasingly important in our modern, complex accelerated work processes. A good medical program may not only reduce labor turnover through proper placement, but improve morale and*

THE ECONOMIC VALUE OF AN INDUSTRIAL HEALTH PROGRAM

attract the right calibre of applicants, which are essential factors in stabilizing the work force.

- *An ever increasing amount of potentially toxic materials is being introduced into the industrial environment, bringing about the need for greater attention to the health of workers.*
- *The age of the working population is higher than at any time in the history of our country. Changing physical abilities of the older worker necessitates proper job placement, health education and medical supervision to insure his continued work efficiency and safety.*
- *Industry employs a larger percentage of women workers today and it is known that this develops a higher frequency and severity of illness absences.*
- *With improved machine guarding and effective accident prevention programs, industrial accidents due to mechanical or physical causes have been reduced. Dr. Leon Brady, Director of Research, Center for Safety Education, New York University, points out that it is now generally accepted that we have "reached a point of diminishing returns from physical safeguards," and that further progress in accident prevention is principally a matter of "human factors and their control."* [4]

It has become well established that Industrial Health Programs pay for themselves. The cost of an adequate Industrial Medical Program depends on many variables such as the size of the industry, the inherent hazards, and the health needs of the employees.

- *A survey conducted by the National Association of Manufacturers in 1951 revealed that the average yearly per capita cost for Medical and Safety Programs in a total of 1,576 companies was approximately $25.90.*[1]
- *A Medical Program established in a warehouse employing 150 people resulted in a $7,921 saving in the first six months it was in existence. The cost of the Medical Program for the same period was $3,000.*[5]
- *An insurance office of 200 employees reduced its labor turnover in two years from 6.4% to 3.4% after the initiation of a Medical Program.*[5]
- *An electronics plant of 4,000 employees reduced absenteeism in a six year period from 5.8% to 1.7%.*[5]
- *An electronics plant of 4,000 employees reduced Group Insurance losses by 30% (from $700,000 to $490,000).*[5]

Mr. A. D. R. Fraser, President of Rome Cable Corporation, one of the smallest companies to engage a full-time physician, reports the following advantages of the Medical Program:

In 1947, the year before the Medical Department was organized, their absenteeism record was about the same as the present national average, 70 hours or almost 9 days per year, which represents 3.5% of an employee's normal work time per year. In 1957, their absenteeism dropped to 32 hours or 4 days, which equals 1.6% of the year's total working time. Translated into earnings between the two periods, using the 1957 average, the company showed improved earnings for the employee of 38 hours or almost one week's pay, and a saving of over $800 of production per employee per year.

The net average cost per employee for the nine years after the establishment of the Medical Department has remained approximately the same as the average of the five years prior to its establishment despite the increase in benefits and medical costs that are prevalent.[6]

The industrial nurse can effectively contribute to the control of many problems which affect the health of the worker adversely. Existing environmental health problems are frequently called to her attention even before they are made known to supervisors. Often she is the first person the employee comes to for advice and assistance in matters which concern his health or the health of his family. Early recognition of symptoms which are forerunners of acute or chronic diseases will ultimately result in lowered costs and decrease in lost time.

For the nurse in industry, there are innumerable areas of counseling in which she can make significant contributions. The nurse actually sees more employees more often and in closer relationship than any other person in the company other than their immediate supervisors. Her counsel is voluntarily sought; this means that the employee is in a receptive frame of mind which is conducive to a desirable relationship, this being essential to effective counseling.

Case Histories

As one group concerned with the health and welfare of the employee on and off the job, attention is focused on what professional nurses in industry contribute to the control of costly non-occupational illnesses and injuries, which constitute the cause of the vast majority of days lost from work, in the following examples:

Case I: A sixty-six year old toolmaker with 34 years' company service, while operating a power saw in his garage, caught his right index finger on the saw with resulting deep laceration of the terminal interphalangeal joint. The employee was absent from work for

two days. When he returned the third day following the injury, he was assigned work which did not involve use of the injured finger.

He reported every day to his physician for dressings, losing two to four hours from work. Sixteen days after the injury, he reported to the company Health Service with a request from his physician for dressing changes to be made in the Health Service. This request was approved by the company physician.

He returned to his regular work and reported daily to the Health Service for dressings. One month following the injury, his physician requested that the Health Service give him daily whirlpool treatments and massage. A total of 35 treatments was given.

Reporting to the Health Service daily for dressings, whirlpool and massage meant a loss of one hour and fifteen minutes from his work. If this health service had not been available, the minimum time lost from his job would have been three hours per day.

The foreman advised that because of this employee's skills, it would take three months to train a new man on his particular type of work. Cost in delayed production and damaged material would have been considerable. The company Health Service saved money for the employee and man-hours for the company, which in terms of dollars and cents could have amounted to a sizable sum.

Case II: In the process of doing a periodic examination, the health inventory was taken by the nurse who, upon close questioning, listening and understanding, learned that the employee presented symptoms of bowel disturbance. This was recorded and called to the attention of the examining physician. After a thorough examination with further studies carried on by the industrial physician and the private physician, surgery was recommended for removal of a malignant growth of the colon. This prompt detection and surgical intervention prevented the probability of a long-term disability and resulted in prolonged life of the employee.

Case III: An employee made numerous visits to the Health Service over a short period of time for many minor complaints and non-occupational injuries with vague causation and, finally, suffered a serious non-occupational injury. The nurse brought this and all previous information to the attention of the company doctor. After careful medical investigation, the fact that the employee's basic problem was alcoholism was discovered. Through the efforts of the company's health service, management and the family, the employee received adequate care and was rehabilitated for his job. In this case, careful diagnosis, evaluation, guidance and rehabilitation avoided the situation where the employee's illness would result in greater periods of lost time and the possibility of injury on the job or off the job—not only to himself, but to others.

Case IV: An employee's personal appearance, physical condition and increasing absenteeism concerned her supervisor. The nurse was asked to see the employee. The nurse learned she was an only daughter, living alone with her mother who was bedridden with terminal cancer. The sole financial support fell on the daughter's shoulders. It was learned that her diet was inadequate as were her sleep and relaxation. The nurse made arrangements through the employee's church parish to have a homemaker come in and also contacted the Cancer Society, who supplied necessary nursing care and dressings for the mother. Management made arrangements for temporary financial assistance.

The counseling and moral support given this employee by the nurse brought encouragement and a feeling that someone cared about her. She became more particular about her attire and appearance, ate better and showed improved work output and attendance.

Good Results Obtained

These cases give only a brief narrative picture of what the industrial nurse is doing as her part in helping to solve the problem of increased cost for non-occupational illnesses and injuries.

It is recognized that Industrial Health Programs do not prevent all illnesses, but it can be stated that they do substantially reduce the disability which would result from conditions that might be allowed to progress if they were not detected in the Industrial Health Service.

In order to accomplish the objective of cost reduction, the nurse in industry must have or develop the skills needed by an administrator, supervisor, teacher and counselor. A well-qualified professional nurse with a broad nursing education, experience in industrial nursing, emphatic understanding and willingness to make adjustments will be able to carry out the multiple responsibilities of these positions. She will perform most effectively when active medical direction and adequate staff, equipment and space are provided. Her capabilities will be utilized to the fullest extent when her position is recognized, clearly understood and respected by all those within the industry, and when her relationship to supervisors and other members of line management is maintained on a staff service or advisory basis. The nurse in industry must have the right and obligation to appeal to higher levels of management when any decision of supervision will react to the detriment of the employee's health and to the best interests of the company. It is important that she cooperate with all departments and allied professions and that she participate actively in staff, departmental, industrial health and safety meetings.

Opportunity and Obligation

Promotion and maintenance of employee health is an opportunity and a moral obligation which commands the attention of industrial management lest other groups take the leadership in this area. While Industrial Health Programs are not instituted primarily or solely for humanitarian purposes, they contribute immeasurably to the national health and productivity of the American worker and reduce materially the hu-

man suffering and socio-economic losses associated with injuries and illnesses. In addition to this, these programs pay large dividends in terms of improved quantity and quality of product at lowered manufacturing costs.

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Picture by courtesy of Portland Cement Assoc.

Nutrition and Industrial Worker

(from page 27)

tivity as such has only a small effect on protein requirements, but the psychological and indirect effects may be considerable.

Any lack of vitamins is likely to be reflected in a loss of appetite which may initiate an undesirable chain of events. In addition, there are specific deficiencies which are likely to affect working efficiency. Dryness and scaling of the skin may be aggravated by lack of vitamin A or of niacin (one of the B vitamins). Lack of other vitamins affects the eyes, may influence fatigue and even have specific effects such as an increased tendency to bruising.

The importance of an adequate intake of water daily cannot be over-emphasized, as one may live without food for some time, but cannot survive over two or three days without water. In certain industries there are cross-connections which contaminate the water supply. Care should therefore be taken that a supply of pure water is available to workers.

Clearly, nutrition comes into the industrial problem of working efficiency, of accidents, of absenteeism, etc., in many ways, even though they cannot be precisely described in our present state of knowledge.[1]

Nutrition and Behaviour

Our knowledge of how nutrition affects behaviour and work performance will be broadened as research in this field continues. Dr. Josef Brozek of the University of Minnesota recently published an article entitled "Nutrition and Psyche" in which he presented a review of the studies which have been done on the relationship of nutrition and behaviour.[2] Dr. Brozek cited examples of attempts to measure a healthy individual's work capacity and motivation in comparison with his food intake and also discussed studies on animals. In conclusion he stated: "There is no doubt that dietary deficiencies affect man's willingness and capacity for work and alter his personality. . . . Motivation, a crucial factor in all achievement is particularly readily affected by improper nutrition."

Other studies have been directed towards determining ability to perform as compared to the number and size of meals. Dr. R. C. Hutchison of Australia conducted studies on the ability of workers to concentrate following the consumption of small and large meals. He discovered scientifically the thing we all know from practical experience. It is difficult to concentrate after a large meal. He demonstrated particularly the effect of output during the early afternoon hours.[2]

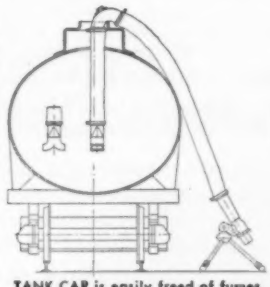
Malnutrition in Industry

A worker may eat a large meal and yet be undernourished. It is therefore safe to assume that many workers in this well-fed nation are undernourished.

In a recent issue of the Journal of the American Medical Association, there appeared an article which was concerned with a research study which had been reported elsewhere. Purpose of the Study: to determine the nutritional status of six hundred industrial workers. Results: 26 percent of these healthy workers were in a deficient nutritional state. In other words, the chances are one in four that the so-called well-nourished well-developed individual has a nutritional deficiency.[2] Such a deficiency may exist because of ignorance of what constitutes an adequate diet, indifference, or poor food habits.

Improving Nutrition in Industry

There are many ways in which industrial leaders can help to improve the nutritional status of their



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workers. Chief among these are the provision of in-plant feeding facilities and a nutrition education program.

In-Plant Feeding Facilities

The various factors affecting industrial feeding facilities must be carefully and thoroughly considered before building a feeding unit on the premises. A primary consideration is the proximity of a restaurant to the industry:

The number of employees served will be a guide in determining the size and type of feeding arrangement.

The type of meal to be made available will determine whether a cafeteria, snack bar, or vending machine is needed.

The physical size or area of the plant will determine whether food carts or vending machines will be needed to supplement a cafeteria or other installation.

The time allotted for lunch will affect the food service. The lunch hour should be staggered if necessary, to avoid an unusually heavy load at any one time.

Types of feeding facilities are shown in Table 1.

Essentials of Food Operation

The Nutritionist, as a consultant, can assist the industrial cafeteria manager with any phase of the food operation from menu planning to keeping adequate food records.

The Menu should be planned with an understanding of good nutrition and should combine food which has eye and appetite appeal. Proper storage of foods is an important economic as well as health measure.

Food Preparation, to be efficient, requires the use of standard and tested recipes. The proper principle of meat or protein cookery, which is the use of low temperatures to cook uniformly, thus retaining nutritive value and minimizing shrinkage, should be applied. Cook only sufficient vegetables to meet the needs of the cafeteria line for twenty minutes. This will help retain optimum nutritive value and appearance.

Sanitation is a cardinal principle in food handling. All food handlers should be in good health and have clean personal habits. Food prepared for any industrial feeding service must be clean, wholesome and free from spoilage, in addition to being tasty and nutritious. Food poisoning is usually caused by organisms infecting the food. These organisms may get into the food by carelessness on the part of anyone handling the food, or by improper food storage. Vermin may contaminate the food and make it inedible. However, insecticides must be used with caution in kitchen areas.

The Dishwasher is an important person on the sanitary squad, and he should be made to understand the importance of properly cleaned dishes for both sanitary and aesthetic reasons. Paper dishes and utensils should be properly stored to protect them from contamination. Proper ventilation promotes cleanliness in the food preparation and serving areas as well as freedom from flies and other insects.

Nutritional Education Program

The universal interest in food creates an ideal opportunity for management to encourage employees to develop a better understanding of nutrition and to help them practice good eating habits at home and on the job. When they understand that unwise eating habits (skimpy breakfasts, poorly planned lunch boxes, too many snack time sweets) can lead to fatigue and lack of efficiency, as well as excessive absences from work with their attendant loss in salary, in many cases, they will take more interest in learning how good eating habits contribute to robust health and abundant energy for themselves and their families.[3]

All industries, whether large or small, can provide some kind of nutrition education for **all** workers. Large plants are particularly well equipped to carry out a nutrition education program through the services of their dietitian and members of the medical department.

The Dietitian or Nutritionist can be of assistance to industry in planning a nutrition education program by stimulating interest in the subject and by discussing matters of weight control, food budgets, meal plans, or other family food problems with the employed members of the family.

The Medical Department in the industrial plant is one of the logical areas to carry out a nutrition program because the physician and nurse are interested in the health of the worker. Health education materials may be advantageously displayed and distributed in the medical department and nutrition can be interchanged with a variety of health subjects such as heart disease, cancer, etc. The medical staff is concerned with special working conditions which have a special nutritional problem, such as high temperatures and the need for extra salt. They are also concerned with more general problems such as absences due to non-occupational diseases where the role of good nutrition is important. Because an individual seeking medical care is in a receptive mood for information and guidance in matters of diet, the **industrial nurse** is in a unique position to aid in a nutrition education program.

Conclusion

Manpower requirement for war production focused attention on improving and maintaining the health, efficiency and morale of the industrial worker and good nutrition was recognized as a primary means to this end.

There is no easy or single method to improve the nutrition of industrial workers. Education of the workers and of the wives is important, but management can play an important role in improving the eating habits of its employees. As it is to the advantage of industry to have well-nourished workers, a progressive management will take an active part in working out

measures to assure adequate feeding facilities, supervise the quality of food dispensed, and co-operate in educational programs and other means for influencing the dietary habits of the workers.

Information and advice on how to set up and operate industrial food services may be obtained from state and local Departments of Health.

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Material by courtesy of Occupational Health Div., Canadian Dept. of National Health & Welfare.
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New Manual on Radiation Hazards

As the world moves toward greater use of atomic energy and other forms of ionizing radiations, industry needs more information on their biological effects. The new "Foundry Radiation Protection Manual," published by the American Foundrymen's Society, international technical society of the metal castings field, describes radiation protection controls for the foundry industry . . . to prevent injury . . . to minimize medico-legal entanglements . . . to provide a sound foundation upon which legislative controls can be developed.

Beginning with basic information about the characteristics of radiation in general, the Foundry Radiation Protection Manual describes the sources of radiation currently being used in foundries.

To many people, the possibility of exposure to radiation is extremely frightening. These fears are understandable in view of world-wide interest centered about the use and effects of atomic weapons. An understanding of how radiation can be handled safely will dispel the awesome impression that prevails among uninformed workers in industry.

The manual covers a wide range of radiation origins, including the commonplace X-ray source. Subject matter enables the reader to develop a knowledge of what radiation is, what it does, why the controls are necessary and how controls can be applied.

The work is a practical presentation of radiation as it applies to the foundry industry in particular. However, it has broad application for other fields in which workers come into contact with radiation sources.

Chapters include: Nature and Source of Radiation in the Foundry; Health Aspects of Radiation; Control of Radiation in the Foundry; Radiation Detection Instrumentation; Protection by Time, Distance and Shielding; and, Procedure for Handling and Use of Source of Radiation. Words and phrases used to describe radiation qualities and characteristics are defined in a well prepared glossary.

Casebound, the manual is available at list price of $9.00 per copy. The book is being made available to members of the American Foundrymen's Society at a special rate of $6.00. Copies can be ordered from the Society at Golf & Wolf Rds., Des Plaines, Ill.

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Radioactive Contamination
(from page 25)

evaluation; however only about 300 square miles within the Hanford reservation immediately pertains to waste disposal.

A few of the methods of geologic and groundwater evaluation at Hanford are unique to the local conditions, but most of them are applicable to other sites. Although various methods are used for regional study at Hanford, drilled wells throughout the reservation provide the basic exploratory and research methods and structures. More than 550 wells totaling about 105,000 feet in depth have been drilled at Hanford since the waste disposal research programs began in 1947.

These wells provide geologic data and actual samples for identification of formations and laboratory study, research structures for special in-place tests, a means for sampling groundwater to determine behavior of the wastes and a way to determine the water table level.

Brown pointed out that movement of groundwaters is the primary concern of geology in connection with the disposal of radioactive liquid wastes. Therefore, geologic studies are directed largely to features that affect groundwater movement.

Soil Monitoring

Dr. D. W. Pearce told the conference that successful ground disposal processes at Hanford have been supported over the years by closely correlated and balanced programs of theoretical study, laboratory and field experimentation.

Dr. Pearce, manager of the chemical effluents technology operation at the Hanford laboratories, said that atomic scientists are broadening their knowledge in the field of the reaction of radioactive wastes with soil minerals. Much of this increased knowledge, he explained, is coming through studies in geology, hydrology, minerology, soil chemistry, analytical chemistry and process engineering.

Recent long soil column experiments, closely simulating actual underground conditions, he said, indicate that waste materials are not breaking through the soil as fast as predicted from laboratory experiments and tests with short soil columns.

Long soil columns tests make it possible to feed solutions in one end of the column and monitor material coming through the soil without being adsorbed, Dr. Pearce said.

Also, a field experiment with a model "crib" (disposal facility) is under way at Hanford. The findings from the first experiment indicate that spreading of radioactive waste materials beneath a ground disposal site may be of greater benefit in disposal than had previously been assumed.

Recent experiments show that several radioisotopes can largely be adsorbed or retained in the soil under certain conditions. Research is continuing on this to develop safer disposal methods at Hanford.

Dr. Pearce said General Electric scientists at Hanford believe that certain reactions between waste materials and soil minerals will also be valuable in treating wastes prior to their disposal to the environment.

Dr. Pearce also pointed out the various facilities used for disposing wastes. Natural surface depressions, called "swamps," are used to dispose of large volumes of normally uncontaminated process cooling water. Highly radioactive wastes are stored in large underground tanks where they cannot escape to the environment. Wastes with less radioactivity are piped to "cribs" or trenches. Trenching is a one-shot method which does not rely on soil adsorption reactions. "Cribs" receive wastes that percolate through the soil toward the water table. This method depends on adsorption and other reactions between the waste and soil minerals. Before offending elements in the waste approach the water table below, "cribs" are abandoned.

"Low Level" Disposal

J. F. Honstead told the conference that in disposing of low and intermediate level wastes at Hanford, three main systems are utilized. They are:

1. The ability of soil to adsorb and immobilize the radioactive elements is utilized.
2. Wastes are discharged into environmental materials with ensuing dilution to levels of no concern.
3. Wastes are injected into a path that is of long enough duration to permit suitable decay of radioactive materials before they reach a populated domain.

High level wastes at Hanford—wastes that remain radioactive for a relatively long period of time—are stored in huge concrete-encased steel tanks underground. The low and intermediate level waste streams are disposed directly to the ground in the 600-square-mile Hanford reservation, with rigorous control and monitoring to assure public safety.

Hanford is ideally located for safe disposal of wastes because of its isolation from populated areas, its semi-arid surroundings, its deep water table below the desert surface, and suitable geologic conditions, according to Honstead.

Although low concentrations of various waste components have been found in wells which are used at Hanford to monitor the ground waters near disposal sites, the ground waste disposal practice has been so managed that no movement of radioactive fission products to the river has been detected.

Large amounts of Columbia River water are pumped through Hanford's eight reactors to serve as a coolant. This water, which becomes slightly radioactive, is held in retention basins until most of the short-lived radioactivity decays and then it is dumped back into the river.

Water is regularly sampled immediately below the reactors and downstream at Pasco and Kennewick where drinking water is taken from the river. This sampling, along with a great deal of additional research related to the river and river life, shows that no accumulation of long-lived fission products has ever been found in the Columbia.

Studies also show that exposure is far below the maximum permissible limit for members of the public near the plant who consistently drink the river water, eat fish from the river, or participate in swimming and boating on the river.

Joining a select group of Massachusetts companies who have achieved excellence in safety programs, is The B. F. Goodrich Footwear and Flooring Company of Watertown, Massachusetts.

Mr. Charles L. O'Reilly, President of the Massachusetts Safety Council, and Mr. Robert A. Chadborne, Executive Secretary of the Associated Industries of Massachusetts, jointly presented the "Meritorious Achievement Citation" to Mr. Raymond H. Blanchard, President.

"This marks the first time the award has been presented since 1958. Of the six thousand plants in the Commonwealth, only twenty-four have previously earned the award," said Mr. Chadborne.

To qualify for the award a company must attain a total of at least 1,000,000 consecutive man-hours without a disabling accident. The Watertown concern accumulated a total of 1,111,499 accident-free hours.

Mr. Blanchard, in accepting the award, stated that all members of industry's team benefit from successful safety programs—the employee, his family, and management. "Real credit for this award should go to our supervisory staff which carried out the all important follow-up of the program goals," he said.

• • •

The National Safety Council Award of Honor has been presented to the First United States Army for its outstanding safety performance during the Fiscal Year 1959 (July 1958 to June 1959), it was revealed recently by Thomas H. Ayers, Safety Director of Headquarters First U. S. Army. It was the first time that First Army won the Safety Council award.

Basis for the national safety award was the 19 percent reduction in all types of accidents and injuries among First U. S. Army and 1st Region, U. S. Army Air Defense Command personnel from July 1958 to June 1959, resulting in a theoretical savings of approximately $900,000. Earlier this year First Army was also cited for the first time with the Department of the Army Award of Merit for Safety for its improved safety record.

• • •

An award for the best industrial safety record in the corporation in the past year was given recently to the Winchester-Western Division of Olin Mathieson Chemical Corporation by Stanley de J. Osborne, president.

Winchester-Western, a manufacturer of sporting arms and ammunition, in winning Olin Mathieson's first President's Annual Division Safety Award established one of the best figures ever recorded under industry classifications set by the National Safety Council.

Winchester-Western's accident frequency figure was 0.88. This compares to a total industry average of about 6.0, and an over-all figure for Olin Mathieson last year of 4.38. In 1958, the most recent year for which National Safety Council figures are available, the lowest industry classification was Communications which had an accident frequency figure of 0.97.

The 0.88 figure represents a total of 10 injuries for more than 11,000,000 man-hours of work covering field sales as well as other opera-

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tions for Winchester-Western and Ramset in plants at Cleveland, East Alton (Ill.), and New Haven. The figure also reflects continued improvement over the years and the lowest frequency rate in Winchester-Western history.

For achieving this safety figure, Winchester-Western was presented with a special plaque which in turn will go each year to the division setting the best record.

• • •

A Mobil Oil Company refinery won a double header in safety achievement during 1959. The Beaumont, Texas, refinery received both the National Safety Council's Award of Honor and the American Petroleum Institute's Accident Prevention Award.

The NSC Award of Honor represents at least 3,000,000 consecutive man-hours worked by employees without a disabling injury. API's Accident Prevention Award represents more than 1,000,000 man-hours. The Beaumont refinery, in winning two awards, broke the previous high mark in safety for Mobil refineries throughout the world, also set by Beaumont in 1951.

In presenting the awards, William H. Montgomery, New York, general manager of manufacturing, Mobil Oil Company, lauded employees for their cooperation and around-the-clock vigilance. "Few refineries ever get the Award of Honor," said Mr. Montgomery, "because of their complex operation and the size of their work force."

• • •

The Henry, Illinois, general chemicals plant of B. F. Goodrich Chemical Company has won the firm's highest safety award—the President's Cup—for working all of 1959 without a single disabling injury. The past year was the Henry plant's first full year of operation. The plant's safety record has continued unbroken thus far in 1960.

The President's Cup is awarded each year to the plant with the lowest disabling injury frequency rate among the six plants of the chemical company. The Niagara Falls, New York, plant also completed 1959 without a disabling injury; however, the Henry plant worked more actual man-hours during the year and was adjudged the winner.

• • •

Thomas N. Boate, manager of the accident prevention department of the Association of Casualty and Surety Companies, was named by the American Museum of Safety as recipient of the Arthur Williams Memorial Medal for "leadership in traffic safety."

The citation, presented at the banquet of the Greater New York Safety Council's annual Congress and Exposition, points to "more than thirty years of devoted service to the cause of safety" in the United States. Mr. Boate's traffic safety experience covers local and state governmental fields as well as extensive national activities. A gold watch accompanied the citation.

Mr. Boate was born at Carlisle, Pa., and started his career in the Pennsylvania Highway Patrol, where he rose to the rank of captain. When the patrol was merged with the State Police, he organized and headed the 1,000-man traffic division, becoming the personnel officer and judge advocate. Mr. Boate retired from the Pennsylvania State Police in 1944 and joined the staff of the Association of Casualty and Surety Companies, where he became manager of the accident prevention department, the position he holds today.

The extensive safety programs developed by the Association and directed by Mr. Boate, including direct assistance in traffic accident prevention for state and local officials, which touches all phases of traffic accident prevention such as uniform traffic laws and their enforcement, driver education, motor vehicle inspection, traffic engineering and state-community assistance, have won national recognition.

• • •

Industrial Building Show

The most extensive conference ever arranged on construction of new industrial buildings and modernization of old ones will take place in New York December 12 through 15. The conference will be a feature of the first Industrial Building Exposition & Congress at the New York Coliseum. Both events are being produced by Clapp & Poliak, Inc., New York exposition management firm, and are under the sponsorship of a board composed of 28 of the nation's foremost architects, builders, engineers and industrial executives.

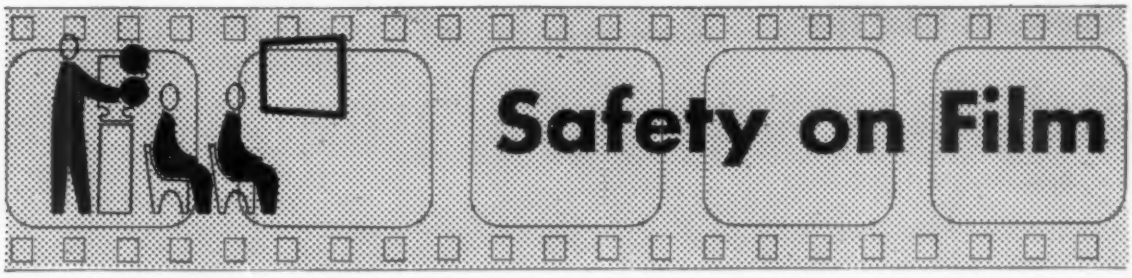
Nineteen basic topics dealing with virtually every major aspect of new construction and modernization are scheduled. Discussions will involve: types of plants to meet specific needs, financing, modernization and expansion, minimizing disruption, site selection, trends in plant design, dealing with community officials, employee services, prefabricated components, advances in use of concrete, plastics in construction, flexibility, the executive team in charge, planning a modernization program, changes in design and adjustment of costs, owner supervision as construction progresses, completing final stages of construction, construction problems abroad, and company handling of its own construction.

Seventy-five companies already have contracted for exhibit space although the first show is still almost a year off. Exhibits will fall into eight major categories.

They are: Structural products (foundations, walls, floors, windows), mechanical products and systems (conveyors, elevators, waste-disposal systems), electrical (power distribution, lighting, process control), heating and air-conditioning equipment, employee services (cafeterias, washrooms, recreation), plant sites and services offered by states and municipalities (transportation, power, water), financial services (banks financing services, states and cities), and auxiliary services (landscaping, parking, etc.).

The audience is expected from every country in the world. No combined exhibit and congress in this field has ever been held.

Visitors who plan to attend may obtain information about hotel reservations, conference attendance and rapid registration cards for the show by writing Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y.



Resuscitation Film

A special dramatic film, entitled "50,000 Lives," on the newly-approved mouth-to-mouth rescue breathing technique, is available for free-loan to community organizations, high schools, colleges and TV stations, through the national distribution centers of Association Films, Inc. This 13½ minute, color and sound film graphically demonstrates the new mouth-to-mouth and mouth-to-airway techniques of resuscitation, and shows why these methods are far superior to previously used manual methods.

Mentioned in the Bible but overlooked until recently, the mouth-to-mouth technique is now the official life-saving method adopted by the American Red Cross and our Armed Forces. Every man and woman is urged to learn the method, which can save 50,000 lives needlessly lost each year through asphyxiation.

"50,000 Lives" was underwritten by Johnson & Johnson and produced by M P O as an educational public service program. Its aim is to teach as many viewers as possible the simple procedures of rescue breathing by mouth and by airway.

Prints of "50,000 Lives" may be obtained for free-loan from Association Films' distribution centers located in: Ridgefield, N. J. (Broad at Elm); La Grange, Ill. (561 Hillgrove Ave.); San Francisco, Calif. (799 Stevenson St.) and Dallas, Tex. (1108 Jackson St.).

Film Catalog

More than 80 films describing American work simplification and industrial engineering techniques are included in the 1960 edition of the Industrial Management Society film rental catalog.

The folder explains the terms by which the 16mm films are available for rental. These films, produced by leading American companies, all have won awards in the annual Methods Improvement Competition sponsored by the Society. Many of the films are in color and sound.

The films are approximately 10 to 15 minutes long in running time and picture "on-the-job" training and work simplification projects in both plant and office operations.

Copies of the brochure are available by writing the Industrial Management Society, 330 South Wells Street, Chicago 6, Illinois. There is no charge for the booklet.

Recreation Safety Films

Educational safety films produced by the Ætna Casualty and Surety Company are available on a free loan basis for specific showings from the company's Information and Education Department at Hartford 15, Conn., or through local Ætna representatives. Free loan is restricted to the continental United States and the films cannot be televised without prior consent. Films for off-the-job recreational safety that are currently available include:

AIM FOR SAFETY: 16mm, Sound, Color, 15 minutes

This hunting safety film outlines safety precautions to be observed by sportsmen who search for game in the woods, fields or marshlands. It illustrates in detail the care and handling of guns.

HOOK, LINE AND SAFETY: 16 mm, Sound, Color, 17 minutes

The full color, scenic backgrounds of this film enhance a fishing trip during which an experienced angler shows his novice companion many pointers in safety and woodcraft.

OUTBOARD OUTINGS: 16mm, Sound, Color, 18 minutes

Narrated by Garry Moore, noted television personality and boating enthusiast, and produced with the cooperation of the United States Coast Guard Auxiliary, this film pictures the pleasures of motor boating, and demonstrates the boaters' "rules-of-the-road" as well as safety precautions to be observed.

PADDLE A SAFE CANOE: 16mm, Sound, Color, 13:30 minutes

Produced in cooperation with American Canoe Association, the film offers pointers on all phases of canoe handling—afloat and ashore. Technique of "shaking out" and getting into capsized canoe are shown in slow motion. Award-winning film.

SAFETY AHOY: 16mm, Sound, Color, 15 minutes

This film covers boating safety and gives many helpful suggestions for the handling of small craft, including rowboats, sailboats and motorboats. It illustrates the right-of-way rules for avoiding collisions.

SECONDS COUNT: 16mm, Sound, B/W, 8 minutes

This is an instructional film on the Nielsen method of administering artificial respiration. It is ideal for the life saving, civil defense and first aid classes. Award-winning film.

SKI TIPS: 16mm, Sound, Color, 22 minutes

Narrated by Lowell Thomas and filmed at scenic Franconia Notch, N. H. This film outlines safety rules for beginning and experienced skiers, and describes the work of the Ski Patrol. Award-winning film.

Continuous Filter Film

The Eimco Corporation has announced the availability of a new 16 mm. sound and color motion picture on the operations of the EimcoBelt continuous belt drum filter.

Called "The EimcoBelt Story," this 32-minute sound film discloses the EimcoBelt's new operating principle in an animation sequence and how this important break-through in filtration was developed and perfected by engineers and researchers. The film also demonstrates the filter's ability to remove the medium from the drum every filter cycle for cake discharge and cloth washing and how this enables it to maintain a clean filter medium, even handling glutinous materials of slurries containing low density solids.

The EimcoBelt is shown installed in five different processing operations, each involving a particularly difficult slurry, several of which had never been filtered before, successfully, on vacuum filters.

Other highlights of the film are demonstration comparisons between the tedious cloth belt changing of a drum filter and the simple fast change of filter media on the new filter; a brief glimpse of the filter during its development stage in Eimco's Research and Development Center at Palatine, Illinois.

Prints of "The EimcoBelt Story" can be made available to interested firms and groups. Requests for showings should be addressed to The Eimco branch office nearest you or directly to The Eimco Corporation—Audio-Visual Department—P.O. Box 300, Salt Lake City 10, Utah.

Injuries Down In Last Quarter of '59

Injury rates in manufacturing dropped to 11.1 disabling injuries for each million man-hours worked in the last 3 months of 1959—down 17 percent from the previous quarter, the U. S. Labor Department's Bureau of Labor Statistics announced, on the basis of preliminary reports.

Rates declined slightly in October, instead of rising as usual, and showed greater than seasonal decreases in the last 2 months of the year. These decreases brought the December rate to 9.9—equaling the all-time low established in 1957.

But Quarter Up

Despite these declines, the October-December average was 3 percent higher than in the previous year. The cumulative rate for all months in 1959 was estimated at 11.9. Final figures for the year may average 9 to 10 percent above 1958, the Bureau said.

Decreases from the third to the fourth quarter were reported in most of the 132 manufacturing industries for which data were available: 81 showed declines of 1 full frequency-rate point or more, 40 varied up or down by less than 1 point, and only 11 reported significant increases.

The most outstanding declines were recorded for the logging industry, where the rate fell from 77.0 in the third quarter to 63.5; wire drawing, 31.0 to 18.7; concrete, gypsum, and mineral wool, 34.2 to 23.0; poultry dressing and packing, 49.3 to 38.3; miscellaneous wood products, 32.8 to 23.8; mattresses and bed springs, 20.1 to 11.2; office furniture, 20.4 to 11.9; canning and preserving, 25.7 to 17.2; and bottled soft drinks, 26.3 to 18.7.

Annual Rates

In only five industries was the 12-month average for 1959 as much as 1 full frequency-rate point below 1958. In 71 industries it was 1 point or more above the 1958 rate, and in 62 it varied by less than 1 point.

A total of 17 industries reported annual averages of less than five injuries per million man-hours in 1959. Some of the lowest rate industries were: Synthetic rubber, 1.8; miscellaneous communication equipment, 2.2; synthetic fibers, 2.3; explosives, 2.3; electric lamps (bulbs), 2.3; electrical equipment for vehicles, 2.5; and radio tubes, 2.5.

Design Engineering Show and Conference

American manufacturers will get a glimpse of the products of the future when the Design Engineering Show, largest exposition devoted to research and development, unveils a $10 million exhibit on May 23. The show will run for four days at the Coliseum in New York where it has been held only once before.

Range of Exhibits

Everything that goes into the ultimate product used in the home or factory will be on display. Mechanical components will be shown by 105 companies, electrical and electronic components by 94, power transmission equipment by 65, metallic materials by 61, non-metallic materials by 55, shapes and forms by 53, fasteners and adhesives by 49, finishes and coatings by 23, and 62 companies will have exhibits to show engineering equipment and services.

Comprehensive Representation

Twenty thousand engineers and company executives, whose responsibility it is to design the products of tomorrow, are expected to attend, according to Saul Poliak, president, Clapp & Poliak, Inc., producer of the show. Virtually every major manufacturing company in the country will be represented among the visitors. Some companies send teams of as many as 20 to inspect the varied products. About 15,000 products, which go into the making of end products, will be shown.

Concurrently with the show, and also at the Coliseum, the machine design division of the American Society of Mechanical Engineers will conduct a four-day conference. This year's papers will concern themselves with the application of space-age design theory and techniques to new consumer products. Advances made in power, control, materials, computers, components and mechanics will be considered.

Advance rapid registration cards, conference and hotel information are available by writing Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y.

THE FIRE FRONT

NFPA Annual Meeting

Leading fire protection authorities from all over the world are meeting in Montreal in May to discuss how to make people and their property safer from fire. Topics ranging from industrial plant protection and fire department equipment to school fire problems and community fire safety education will be among those covered at the week-long 64th annual meeting of the National Fire Protection Association.

The meeting, opening on May 16 at the Queen Elizabeth, will be the first held in this Canadian city by the internationally-recognized, nonprofit organization, which has substantial Canadian representation among its 17,000 members.

International Experts

It is expected to be attended by close to 2,000 persons. Speakers on the program include fire experts from Great Britian, Germany and Japan, as well as from the United States and Canada.

Proposed changes and additions to the National Fire Codes, prepared and published annually by the Association, are to be debated and acted upon. The codes are standards of good practice widely observed in industrial and commercial operations and the basis of regulatory measures as well.

Conference Topics

Among the many fire subjects to be discussed during the five-day meeting will be modern timber construction, chemical processing safety, developments in extinguishing agents, flammable liquid hazards, storage of gases, aircraft fueling procedures, and cutting and welding hazards.

One panel discussion will deal with the important question of people's awareness of fire hazards in the home and simple rules of personal fire safety.

Other topics will be a report on a study of fatal fires, improved safety in school buildings, hospital operating room fire hazards, and methods to improve fire protection for libraries and museums.

There will be a concurrent meeting of the Fire Marshals Association of North America, a section of the National Fire Protection Association.

February Fire Picture

Estimated fire losses in the United States during February amounted to $96,782,000, the National Board of Fire Underwriters has reported. This loss represents a decrease of 1.4 percent from losses of $98,120,000 reported for February 1959, and an increase of 4.1 percent over losses of $92,949,000 for last January.

Losses for the first two months of 1960 now total $189,731,000, a decrease of 10.1 percent from the first two months of 1959, when they amounted to $211,103,000. These estimated losses include an allowance for uninsured and unreported losses.

Six Vital Check Points on Sprinklers

The six vital points in an automatic sprinkler system that bear regular watching are outlined concisely in a report by Pinkerton's to its own force of uniformed security guards.

The national agency, which operates more than two thousand plant protection and security installations for business and industry, notes that most often it is the uniformed guard's responsibility to inspect the sprinklers.

Though on each installation the guard force should have specific instructions, according to Pinkerton the following generally are the "vital points of the sprinkler system which require watching":

1. Shut-off valves—These obviously must be kept open. Though some systems have automatic alarms to detect this, the security guard should immediately report any valve found shut.

2. Air pressure—It must be kept up to insure proper flow of water from pressure tanks and to prevent tripping of dry-pipe systems. Excessive high or low pressure should be reported immediately.

3. Steam pressure—This must be maintained constantly for engine-driven fire pumps. Gauge readings below required minimums should be reported right away.

4. Power supply—At some installations fire pumps are driven electrically. Guards should check the electricity supply regularly.

5. Water level—Where gravity tanks are the source of water, the required water level must be maintained.

6. Water temperature—Temperature in outdoor tanks must not drop to the freezing point. If an automatic alarm has not been installed to warn of dangerous temperature drop, the guard should be detailed to check the heating apparatus.

Not part of the sprinkler system itself, but a serious condition to be reported by the uniformed security guard, is any obstruction, such as merchandise piled high under sprinkler heads, that can seriously impair the system's ability to douse a fire.

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LP-Gas Fire Control

The National Board of Fire Underwriters has provided information to assist fire departments and other interested groups in logically approaching and handling an LP-Gas emergency. Such an emergency is most intelligently handled when the characteristics of the gas and the equipment used therewith are known and understood.

When a container is filled with LP-Gas, the latter is in the form of a liquid so maintained by its own vapor pressure. If this liquid is spilled or the pressure removed from the liquid, the contents vaporize readily at almost any atmospheric temperature. These vapors when mixed with air in the correct proportions can make a flammable mixture.

Flammability Range

The limits of flammability of LP-Gas in the presence of air vary in accordance with the particular mixture that is used. The chief constituents of this gas are propane and butane. Propane has a flammable range of from 2.2 to 9.5% vapor in air. Butane has a flammable range of from 1.6 to 6.5% vapor in the air. Therefore, when considering LP-Gases, it is best to consider that the flammable range is from 1.6 to 9.5% vapor in air by volume. This means that a concentration of less than 1.6% LP-Gas in air is too lean to flash and burn, while a mixture of more than 9.5% LP-Gas in air is too rich to burn. LP-Gases have a narrow flammable limit range, but it is wider than gasoline which is 1.0 to 6.0% vapor in air.

LP-Gases contain no toxic components such as carbon monoxide and, therefore, the vapors are nonpoisonous. They are anesthetizing, however, when high concentrations are inhaled over a considerable period of time. If breathed in sufficient concentrations, the vapors will produce nausea, headache and asphyxiation.

There are other characteristics of LP-Gases that are important to fire fighting operations. These hydrocarbon gases are heavier than air, propane being one and a half times as heavy as air and butane about twice as heavy as air; thus there is a tendency for them to settle in low places. The flame travel in liquefied petroleum gas vapors in open air is about 15 feet per second, depending upon the atmospheric conditions and the concentration of the gas. Leaks from LP-Gas tanks, cylinders and piping can be detected by the odorant in the gas, the deposition of frost at the point of leakage or as a mist in the air. This frost or mist is due to the condensation and freezing of moisture in the air, since LP-Gases are refrigerants.

The basic precautions in any LP-Gas emergency are to (1) approach the fire or gas leak from upwind, (2) remove all persons in the vapor cloud area, (3) eliminate all sources of ignition, (4) if necessary, evacuate any area which is in the path of the vapor cloud, and (5) keep all persons at least 200 feet away from the vapor cloud area, except those necessary to cope with the emergency.

Leakage of LP-Gas Without Fire

Good fire protection requires that every LP-Gas installation be provided with means for shutting off the supply of gas in case of emergency. If the escaping LP-Gas is not on fire, any valve available that will stop the flow of gas should be closed. Most LP-Gas installations are provided with shut-off valves at the container. If bulk storage facilities are involved, the plant personnel should be consulted on the means to shut off the gas. If a LP-Gas vehicle is involved, the driver should be consulted. Cylinder systems are equipped with hand wheel shut-offs or wrench shut-offs. A wrench should be provided at each customer location, and fire apparatus should be so equipped that a wrench will be available at every emergency. There is a type of system where there is no shut-off valve that can be turned off directly. This system is so designed that when the

regulator is removed, the valve automatically closes. Another method that can be used to shut off the gas is to crush or crimp the copper outlet tubing, if such tubing is used.

Water spray is effective in helping disperse LP-Gas vapor. If available, it should be used as soon as possible directing the spray stream across the normal vapor path and pushing the vapor into a safe location. Those handling the fire hose should avoid entering the vapor cloud and should keep low behind the spray so that they will be somewhat protected from radiant heat if the vapor should be ignited unexpectedly.

If it becomes necessary for firemen or others to enter an enclosure where LP-Gas vapors have been released and there is a possibility of oxygen deficiency, self-contained breathing apparatus should be used. Ventilation can be provided by air movers and small rooms such as pump rooms can be effectively purged of a concentration of LP-Gas by carbon dioxide. An individual trapped in a room in which large quantities of LP-Gas vapors have escaped should remember that asphyxiation is possible because of the exclusion of oxygen. Combustible gas indicators should be used to detect flammable atmospheres in suspected locations.

Sometimes when a tank is leaking without a fire, it may be desirable to move the tank to some remote area such as a blocked off isolated roadway or open field where it can leak safely, away from sources of ignition. However, if this is to be done the tank should be moved only in an upright position. The tank should never be dragged in a manner which might damage valves or piping. Any attempt to right an overturned tank in order to move it to some remote location, should be done carefully to avoid damage to valves and piping and to prevent ignition.

In general, a LP-Gas fire should not be extinguished unless the flow of fuel can be stopped.

If the escaping gas is on fire, immediately apply large quantities of water as quickly as possible to all surfaces exposed to heat, with approach to the tank being made from the sides. An LP-Gas container is so designed that if it is exposed to an adjacent fire, excessive pressure due to the heat of the fire will open a spring loaded relief valve, or the heat will melt a fusible plug to relieve the pressure. The relief valve is superior to a fusible plug because it will reset itself after a temporary pressure increase. It is possible for a safety valve equipped container to rupture. When flame impinges on a container, above the liquid level, the metal weakens and eventually the tank may rupture. However, hose streams directed against the shell of the tank will cool the metal, reduce the pressure and may prevent rupture. Hose streams should be concentrated on containers, their piping, adjoining vessels, equipment, and combustible surfaces exposed to flame or intense radiant heat. Heavy stream appliances, such as portable or fixed turrets or hose holders with large capacity spray nozzles are very desirable where continued application of large quantities of water are considered necessary.

Consult Personnel

If a bulk storage facility is involved, the plant operating personnel should be consulted regarding the possibilities of shutting off the fuel supply. If a tank vehicle is involved, the driver of the vehicle should be consulted. Stopping the flow of gas should be the first consideration. However, this does not preclude the use of water applied to the tank to cool the contents. Members of fire-fighting organizations should endeavor to become acquainted with managers and operating personnel of companies using, transporting, and storing LP-Gases. Firemen should learn the location and method of operation of shut-off valves, contents of the buildings, and other details pertinent to the fire-fighting problem. Then, when it becomes necessary to combat such a fire, they will be able to act effectively.

If the only valve which can be used to stop the flow of fuel is involved in the fire, consideration should be given to the possibility of shutting off the valve by protecting the firemen with water spray streams and protective clothing. This operation should be carried out with caution because of the possibilities of flashbacks and trapping firemen in the flames.

The controlled burning of escaping LP-Gas (which cannot be shut off by closing a valve) is a commonly accepted practice. The application of sufficient water to keep the shell of the vessel and piping cool will allow the fire to consume the product in the tank without danger of failure.

Dry chemical extinguishers are best suited for small LP-Gas fires and they should be applied at the base of the fire.

The situation may arise where even though large quantities of water are being applied to the tank, the pressure may be increasing excessively within the tank. This may be or may not be accompanied by a bubble or blister forming on the tank shell. This pressure increase often can be noted by an increase in the volume of the fire or the noise level of the escaping gas. Any of these signs should serve as a signal to withdraw all men to a safe location.

Failure of LP-Gas tanks usually occurs only when some portion of the metal surface in the vapor space of the vessel becomes overheated, softens and weakens to the point that the pressure of product in the tank pulls the tank metal apart and a rupture results.

Shooting holes in an LP-Gas tank that is involved in a fire may be dangerous, does not serve any useful purpose, and should not be permitted.

Ordinarily no attempt should be made to move any tank involved in a fire. The reason for this is that the hazard cannot be materially reduced. However, if specific conditions develop, where it is considered desirable to move the tank, it should be moved only in an upright position. The tank should never be dragged in a manner which might further damage valves or piping. Any attempt to right an overturned tank in order to move it to some remote location or to facilitate product withdrawal should be carefully done to avoid damage to valves and piping.

There is no known material or method that will extinguish a fire in a large quantity of LP-Gas. Such fires are impossible to blanket and unless the fire is small, it is difficult to dilute the air sufficiently to starve the fire to extinguishment. Therefore, in case of a large LP-Gas fire,

if the source of fuel cannot be cut off, the chief concern should be to keep the tank and other exposed equipment as cool as possible and prevent the spread of fire.

Serious Exposure of LP-Gas Equipment from Adjacent Fire

It is always important that any exposure fire be controlled. In the event that LP-Gas storage vessels or equipment are subjected to serious fire exposure such as from a nearby burning building or fire involving another fuel, sufficient water should be applied to cool the shell of the LP-Gas vessel and the piping to prevent or reduce the release of LP-Gas.

If the LP-Gas storage vessel becomes heated to the point of causing the relief valve to function, the discharge should be allowed to burn, if it becomes ignited; or in some cases, should be ignited so that it will not create a further hazard. At the same time, large volumes of water should be applied continuously to the vessel and piping to keep it cool; this will reduce the pressure in the tank and the torch will burn out when the tank pressure is reduced below the set pressure of the relief valve.

Portable LP-Gas cylinders that are exposed to a serious fire should be removed to a safe location.

Picture by courtesy of Standard Oil Co. of N. J.

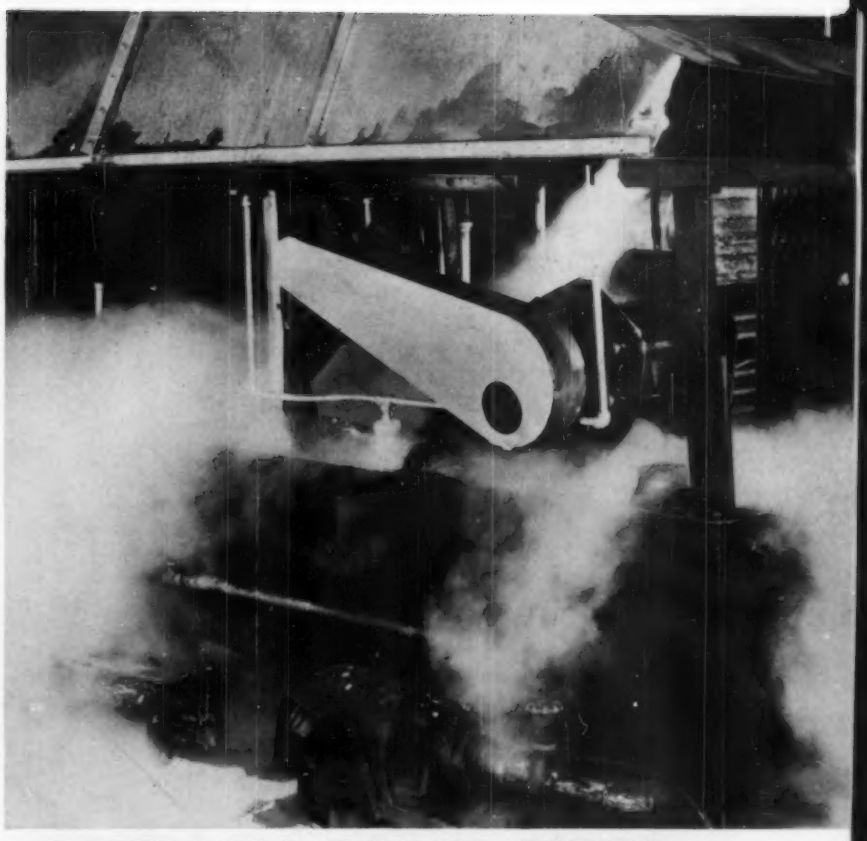
Aluminum Dust Fires

Another in the National Fire Protection Association's series of fire-prevention codes for explosive dusts has been approved by the American Standards Association. It is titled American Standard Code for the Processing and Finishing of Aluminum, Z12.19–1959.

The aluminum finishing code was officially adopted by NFPA in 1956. Last year it was amended by the addition of a paragraph giving precautions to be followed when powder-operated tools are used.

The aluminum code indicates the practices necessary to reduce the possibility of fires or explosions for

(Continued on page 44)



QUENCH TANK FIRES . . . QUENCHED

Common Industrial Fire Hazard Protected by Carbon Dioxide

Carbon dioxide, shown starting discharge, is a most efficient protection against the flash of fire in an oil filled quench tank, one of industry's most common pieces of production equipment. Of equal importance is the fact that quench tank fires rank high on the list of causes of industrial fires.

Automatic carbon dioxide systems provide round-the-clock protection against such blazes. At the first flick of flame, rate-of-temperature-rise fire detectors (or in some cases, fixed temperature thermostats) trigger nearby cylinders of carbon dioxide. The pressurized gas floods from its containers and passes to the tank where it is discharged from nozzles across the surface of the flaming oil in sufficient volume to reduce oxygen to a degree insufficient to support combustion. The fire is snuffed out in seconds. In addition, the cooling action of the dry ice gas tends to lower oil temperature, minimizing the possibility of a re-flash.

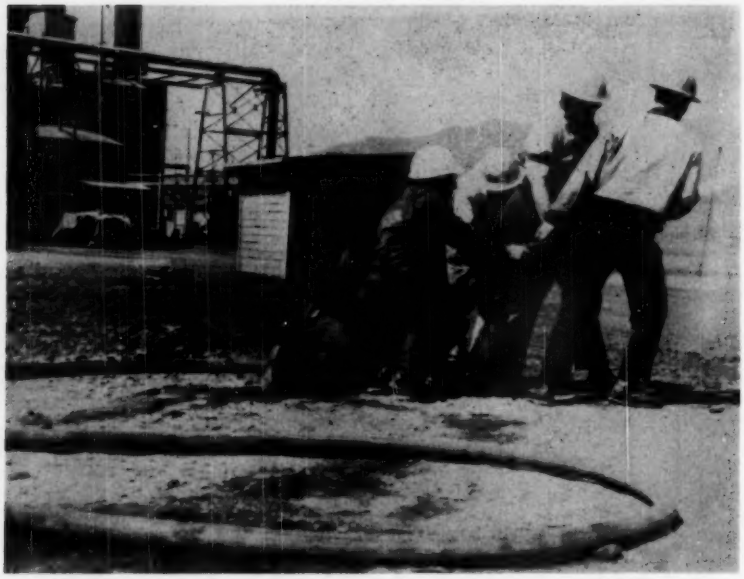
Pressure-operated trips and switches can be built into the carbon dioxide piping and are actuated by the passage of the gas. They can cause electrical equipment like motors and fans to be turned off, close dampers, or sound alarms—all automatically.

Normally pull boxes are incorporated in an automatic system which permit it to be manually actuated. If desired, a reserve bank of cylinders can be installed to take over the guard duty while the primary bank is being discharged. Finally, the system can be engineered to protect several hazards from one central bank of cylinders.

Carbon dioxide, in addition to being an efficient fire extinguishing agent, is a non-conductor of electricity. Being a dry inert gas it cannot damage motors.

Picture by courtesy of Walter Kidde & Co., Inc.

Fire Hose Passes Tough Test



Special fire hose is still going strong after a service life 16 times that of ordinary hose. Tough, all synthetic, hose was supplied for mill's heavy duty needs.

After a service life 16 times that of ordinary hose, 600 feet of an oil and chemical resistant hose is still going strong in the rugged chemical environment around an Idaho pulp and paper mill.

The conditions under which the all-synthetic hose is stored and used are "as tough as there are anywhere," according to C. O. Bing, Fire Chief for Potlatch Forests, Inc., in Lewiston. The area where the hose is used contains lime rock, salt cake, acids, and "black liquor," the caustic solution used in pulp manufacture. The ground itself is gravelly, and criss-crossed by railroad tracks.

Outdoor humidity turns salt cake on the hose into corrosive substances. In the four years that the hose has been at Potlatch, it has never been washed or refolded in the sheds. Ordinary hose must be refolded periodically to prevent cracking at the folds.

"The only noticeable effect of its rugged treatment has been some whitening of the hose from its original black," Bing says.

Before accepting the hose, Bing subjected it to a series of gruelling tests. First, a length of the hose was put on an outside sprinkler system and run under 125 pounds working pressure, six hours a day, seven days a week, for nearly six weeks. In such service, rubber-covered and cotton-jacketed hoses had lasted only two weeks because of tube failure and surface attack by fumes. When flex-tested under 300 to 400 pounds pressure at the end of the six weeks, the special hose performed perfectly.

The same hose length was then hitched to the top opening of one of the "mud tanks" containing pulp-mill chemicals. Chemicals in and around these tanks include sodium carbonate, sodium sulphide, sodium hydroxide, and products of sodium hypochloride, free chlorine gas, and chlorine dioxide. After an eight hour exposure, the hose was stored for two weeks without washing. When washed, it was still perfectly serviceable. A rubber hose, subjected to the same chemical exposure for eight hours and stored unwashed for only eight hours was so cracked and weakened that it had to be discarded.

The special fire hose was then selected to meet the critical fire protection requirements of the gigantic pulp and paper mill, where each day the largest white pine mill in the world produces 525 tons of paperboard and 600 tons of pulp for package manufacturers all over the United States.

Even after four years, Mr. Bing is still studying the hose. He has not given it any maintenance, he explains, "Simply because we want to see how much it can take."

Picture by courtesy of Thermoid Div., H. K. Porter Co., Inc.

Aluminum Fires
(from page 43)

industries where aluminum and aluminum alloys are subject to processing or finishing operations in which a fine metallic dust or powder is liberated. It applies to operations such as grinding, buffing, and polishing. In some of these operations the aluminum particles may be intermixed with other materials such as lint, wax, solvents, or abrasives. It also covers the handling and storage of aluminum powder by processors.

The manufacture of aluminum powder is covered by the newly revised American Standard Code for the Prevention of Dust Explosions in the Manufacture of Aluminum Bronze Powder, Z12.11–1959. The American Standard Z12.19, is available at 40¢ a copy; the American Standard Z12.11, at 50¢ a copy from: American Standards Association, Dept. PR 125, 10 E. 40th Street, New York 16, N. Y., or National Fire Protection Assoc., 60 Batterymarch Street, Boston 10, Mass.

Instrument-Automation Conference & Exhibit

Subjects ranging from air pollution and the instruments used to determine its nature and extent to the proper specification and use of control valves in industrial processes, will occupy the attention of

scientists, engineers, technicians and educators meeting in San Francisco from May 9 through 12. This will be during the Summer Instrument-Automation Conference & Exhibit being held under the auspices of the Instrument Society of America in San Francisco's Civic Auditorium and Brooks Hall. This will be the first Conference & Exhibit the Society has ever held in San Francisco. The event is expected to attract more than 5,000 persons from the United States and Canada, and especially from the eleven Western States.

Approximately 25 technical sessions will be held during the four days and some 60 papers will be delivered by instrumentation authorities from many parts of the United States. All conference sessions will be held in the Civic Auditorium. The exhibit, to be held in Brooks Hall adjacent to the auditorium, will be open May 10, 11 and 12. It will feature the display and demonstration of the latest in instruments, controls, systems and components of some 200 of the nation's leading manufacturers.

Varied Program

The Northern California and the Santa Clara Valley Sections of ISA will act as the Host Committee, and have arranged a series of programs of varied activity outside of the Conference sessions for attendees. These include both a Management Day and a Student's Day program at the Exhibit; special programs for the ladies, and a series of plant tours which include the Ames Research Center of the National Aeronautics and Space Administration at Moffett Field; the Shell Development Company plant, at Emeryville, and the Lawrence Radiation Laboratory at the University of California, Berkeley.

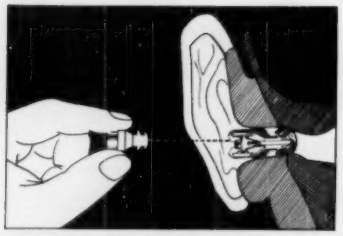
Being held simultaneously with, but separately from, the Conference and Exhibit, will be ISA's 3rd National Power Instrumentation Symposium at San Francisco State College, from May 9 through 11. This is being conducted under the Power Industry Division of the society. Papers to be delivered are concerned with such subjects as the instrumentation and automatic controls used in nuclear power plants; control station automation as carried out in one of the plants of Southern California Edison Company; control and data systems for large steam generating units; practical heat analysis and how automatic equipment can be used. Several hundred power engineers from all parts of the United States are expected in attendance.

Special attention will be paid during the Instrument-Automation Conference sessions at the Civic Auditorium to the concepts, techniques and applications of scientific equipment and methods to many processes and industries, especially those manufacturing electronic, aeronautical and space systems; chemical and petroleum production and processing, and iron and steel production.

Session Subjects

Conference sessions include those devoted to nuclear instrumentation; aeronautical instrumen-

HARMFUL Effects of NOISE to the EAR DRUMS ELIMINATED by *Lee Sonic* EAR-VALVS



A FREE 30 Second Demonstration will PROVE this BEYOND QUESTION. We GUARANTEE THAT! Remember they are NOT EAR PLUGS! They are scientifically developed sound controls that protect the ear drums without interfering with normal conversation or sound. We'll gladly send you a pair for 30 day trial with no obligation to purchase. THEN you will find out why they are recommended and used wherever NOISE is a HAZARD and a deterrent to normal production. Send for a demonstration pair TODAY on your company letterhead.

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(Use Key # R-17 on Inquiry Card on page 1)

Instrument Conference

(from page 45)

tation; metals and ceramics instrumentation; feedback controls systems; analysis instrumentation, measurement and control instrumentation, and sessions dealing with air pollution instrumentation, with specific reference to methods pursued in some of the West Coast cities. In addition ISA will, in cooperation with The American Meteorological Society, sponsor two sessions on aerosols and condensation phenomena instrumentation.

Instrument Maintenance

Other Conference sessions will be devoted to an instrument maintenance clinic; a maintenance management workshop, a sales engineering workshop with special attention paid to developing sales in the military market, and an educators' workshop.

The Instrument Society of America, founded in 1946, and with its Headquarters in Pittsburgh, Pa., is the only organization in the world dedicated exclusively to the advancement and dissemination of knowledge in all the sciences and techniques related to instrumentation, and to the development of standards within the instrumentation technology. It has a current membership of more than 12,000 people including executives and supervisors, engineers and technicians, educators and scientists, purchasing, sales and operating personnel from industrial, commercial, governmental, educational, research and consulting organizations, and manufacturers and users of instruments. Its membership is divided among some 101 Sections located throughout the United States and Canada.

Inter-Com Systems

(from page 9)

a microphone-speaker combination with a pull-down-to-talk switch.

At the Sheffield plant, the installations enable men in the pulpit station of the blooming mill to notify the crane operators when to draw an ingot from the soaking pits. Timing is vital. The ingots must be drawn at the proper time so there is no delay in rolling. Allowing the ingot to cool would necessitate reheating operations.

Sheffield also is amplifying the system's signals. This enables the foreman in the soaking pits area to hear conversations between crane operators or blooming mill operators at the crane stations. The result is a clearer understanding of

Team from Japan's Chemical Industry Studies Kodak Safety Methods

An 11-man fire-prevention and safety team from Japan's chemical industry recently visited Kodak Park, Eastman Kodak Company's photographic film, paper, and chemicals plant in Rochester, N. Y., to observe modern safety devices in action.

The team, sponsored by the U. S. State Department's International Cooperation Administration, spent the day with Allen L. Cobb, director of industrial safety at Kodak Park.

Cobb said the team was particularly interested in studying the organization of a large, permanent fire-prevention and safety program with in-plant personnel and centralized direction.

In photo are Cobb (left), Sadao Iwai (center), and Masmichi Fukui, the team leader. Fukui is chief of the production department at the Oji Plant of Nissan Chemical Industries Ltd. in Tokyo. Iwai, his assistant on the trip, is manager of the labor relations department of the Sumitomo Chemical Co. of Osaka.

Cobb points out the guard gate on an injection molding press. The gate is electrically and hydraulically interlocked so the machine cannot operate when it is open. The first such safety device was designed at Kodak Park in 1936. It is now supplied by the machine manufacturer.

orders with greater safety, coordinated operations, and speedier production.

The crane telephone communication system is free of transmission noise and outside interference and can be heard clearly above the noise of nearby operations. No special wiring is necessary. The FM carrier waves are transmitted over existing electrical circuits.

Multiple Frequencies

Any desired frequency within the range of the equipment may be set up, and ten different frequencies are possible within a single plant without cross interference. A range of one mile is possible with satisfactory power line conditions. The system also may be operated on batteries in instances where no power lines are available such as remote docks or barges.

Pictures by courtesy of Mine Safety Appliances Co.

SURESEAL MOST SPECIFIED WHERE

- ✔ **the handling of acids and other corrosive materials demand maximum hand protection.**
- ✔ **production requirements prescribe fast, sure handling of caustic liquids.**
- ✔ **positive protection against crippling and disfiguring accidents is a necessity.**
- ✔ **longer glove life is needed.**

Surety Sureseal Gloves, (made from Hycar) give positive protection against the greatest number of acids and other corrosive liquids and wear up to 14 times longer than competitive materials. They are more snag, abrasion and puncture-proof and the exclusive Surety Turn-Cuff gives added protection for arms and prevents liquid from getting into the glove.

Tell us your requirements and test a pair today — at our expense. Write on your letterhead naming your glove jobber and you will receive a pair by return mail.

THE SURETY RUBBER CO. CARROLLTON, OHIO

IN CANADA: Safety Supply Co., Toronto

(For details, use Key # R-9 on card on page 1)

Container Institute

(from page 20)

the development and approval of commercial standards on plastic shipping containers for industrial and governmental uses. The manufacturers will also deal with problems such as freight classification rates, trade practice rules and tariff regulations. These industrial plastic containers have been approved by such agencies as the Interstate Commerce Commission, The Association of American Railroads, The National Motor Freight Traffic Association and the Armed Forces.

Scholarships For Driver Education

A grant of $14,000 to provide scholarships and grants-in-aid to high school and college teachers and supervisors of driver education has been made to New York University's Center for Safety Education by the Esso Safety Foundation.

President O. V. Tracy of the Esso Standard Oil Company presented a check for that amount to Dr. Walter Cutter, director of the NYU center.

The scholarships and grants-in-aid are to be used in a 1960 summer program in driver education at NYU. It will be the sixth such program supported by Esso Safety Foundation grants.

This summer the NYU Center for Safety Education also will supervise safety education training courses, sponsored by the Foundation, at six other institutions—Louisiana State University, Springfield College, Furman University, the University of West Virginia, Memphis State University, and the University of Connecticut.

More than 800 high school teachers and 120 college teachers have participated in the Esso Foundation-NYU program in its five years of operation.

The Center for Safety Education is part of New York University's Division of General Education. The Esso Standard Oil Company is a division of the Humble Oil and Refining Company.

Seattle Safety Meeting

Howard Pyle, president of the National Safety Council, will be the principal speaker at the Fourth Annual Puget Sound Industrial Safety Conference and Exhibition in Seattle on May 12th. The subject of his address will be "The Growing Role of Industry in Off-the-Job Safety."

The all-day program, sponsored by the Seattle-King County Safety Council, will stress the theme—How Safe the Sixties? Speakers and panelists will cover such topics as: "How to Organize a Safety Program," "This Will Kill You" (a demonstration of low voltage hazards), "How to Improve Communications At All Levels," "The Number One Killer (Traffic)" and "The Challenge of the Sixties," featuring a panel of experts.

The conference will be held at the Olympic Hotel. It will feature a morning session, noon luncheon, afternoon session and banquet in the evening. Reservations may be made by writing the Seattle-King County Safety Council, 304 Spring St., Seattle, Wash.

ADJUSTABLE SPATULA TEMPLES

Universal fitting, spatula type, Retrax temples are available on Watchemoket Optical Co.'s new Rapido line of custom-fit frames. These temples are designed to satisfy style requirements, eliminate fitting problems and reduce inventory, by making it unnecessary to stock a number of sizes. The wearer simply slides the spatula ear piece in or out of the temple member for a perfect, comfortable fit, with a no-pressure grip behind the ear.

For details, use **Key # EP-1** on inquiry card on page 1.

FACE SHIELD WITH HEAD AND CHIN PROTECTOR

A safety helmet with a combination acetate face protector and soft vinyl hood and bib has been announced by Paulson Mfg. Corp. The new type of shield is said to offer top-of-head, full face and chin protection while working with flying particles such as sparks, grain, feed, seed, dust, powder and chips, as well as with chemicals and paints. The headgear is interchangeable and is made of lightweight plastic with aluminum spring pivots on each side to give even tension for added comfort, the headband is adjustable.

The face protector, of optical plastic, is reported to be free of any distortion, and also fire and spark resistant. Plastic beading protects the wearer from any rough edges of the shield. The soft hood and bib are snapped into the top and bottom of the face protector by means of plastic bands. Unit weighs less than seven ounces.

For details, use **Key # EP-2** on inquiry card on page 1.

NEW GOGGLES & PLATE HOLDERS

A new coverall goggle and a new plate holder for chippers and welders is available from Bausch & Lomb Optical Co. The goggle is made of soft vinyl which easily fits over prescription glasses. Material provides comfortable fitting to face and head contours. Air vents are nickel plated for clean appearance. Louvre style for welders is available in Arc-Ban welding glass and CR-39 plastic cover lenses are used for lens protection.

Both styles are assembled with a nickel plated steel adjustable head bar. Soft leather nose pads and elastic headbands are featured. The flexible plate holder is designed to provide a wide area of vision and a secure, comfortable fit. The unit accommodates both welding plates or clear plastic cover plates. A slide, used to remove and replace plates in seconds, eliminates the need for clamps or hooks.

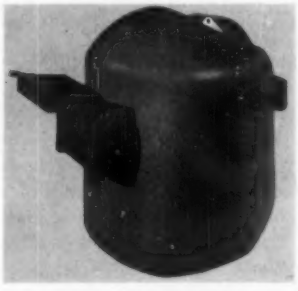
For details, use **Key # EP-3** on inquiry card on page 1.

EYE PROTECTION DEVELOPMENTS

SAFETY GLASSES WITH TWO UNIVERSAL FEATURES

Safety glasses that will fit the vast majority of workers are offered by Chicago Eye Shield Co. Polyfit plastic frames with two universal features are designed to simplify inventory. Polyfit bridge design fits comfortably on nearly all individuals; and nickel-silver temples are also interchangeable with most safety glasses equipped with 5-barrel hinges. Tapered temples are available in cable or spatula styles. Frames with or without side shield according to user's preference.

For details, use **Key # EP-4** on inquiry card on page 1.



IMPROVED WELDING LENS LIFT-FRONT RETAINER

A lift-front plate retainer molded of durable nylon plastic has been developed for its premier line of welding helmets by Sellstrom Mfg. Co. The manufacturer states that in addition to stronger construction the new Model S retainer features greater infra-red resistance and will hold more plates (welding, safety, magnifier and cover glass) than others on the market without sacrificing its compact design.

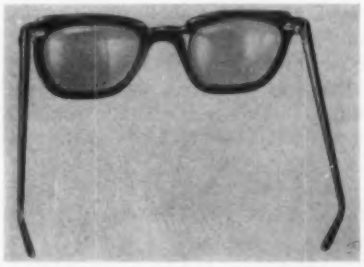
In addition to its large plate capacity, the new retainer features firm plate retention with a completely new spring system. Plate changing is said to be simple; the retaining spring is readily accessible and snaps out as desired. The lift part uses coil springs to maintain a firm open position, closing positively to insure against light leaks. By adjusting two screws, plate retainer can be interchanged. Older model helmets can be easily adapted.

For details, use **Key # EP-5** on inquiry card on page 1.

CLEAR VIEW MASK

A new facepiece for gas masks, hose masks, air line respirators, and demand breathing apparatus has been developed by Mine Safety Appliances Co. The Clearvue facepiece, featuring a large single lens, is designed to eliminate fogging of the lens, and has an improved speaking diaphragm and built-in accommodation for prescription glasses. Approved by the U. S. Bureau of Mines, it will be incorporated in most of the M-S-A breathing apparatus. The wrap-around lens assembly can be replaced quickly in the field. Uniform tension of fasteners maintains seal around the lens periphery, and prevents loosening or shifting. Inspired air is directed over the lens surface by a ducting arrangement, and moist exhaled air is diverted by means of a system of baffles to prevent lens fogging.

For details, use **Key # EP-6** on inquiry card on page 1.



EASY FIT SAFETY SPECTACLE

Ease in fitting, ability to stock fewer sizes, and an improved safety eye-wire are features of the Varifit safety spectacle introduced by the United States Safety Service Co. The bridge is proportioned to the eye size of the frame in a manner that permits correct fitting of safety glasses on over 95% of employees. This eliminates the necessity of stocking various eye sizes in a variety of bridge sizes. The redesigned eye-wire locks the lens in place many times more securely than heretofore possible. The company reports that a frontal impact of well over 200 lbs. is required to dislodge the lens from its secure mounting. Modern style is emphasized in design and color. Lenses are available in hardened glass or lightweight plastic.

For details, use **Key # EP-7** on inquiry card on page 1.

SAFETY SPECTACLES EASILY ADAPTED FOR SIDE SHIELDS

The addition of a new metal frame safety glass to its line of protective eyewear, has been announced by Bausch & Lomb Optical Co. The M-70 combines a durable metal frame with Bal-Safe lenses for greater protection and smart appearance, and features a re-designed, expansion-type endpiece which allows easy assembly of both lenses and side shields. The design of the new expansion endpiece enables the same front to be used with or without side shields, and with no alteration of lens size. Side shields are attached simply by loosening the extra long endpiece screw, inserting the shield retainer in the eyewire groove, and retightening the screw.

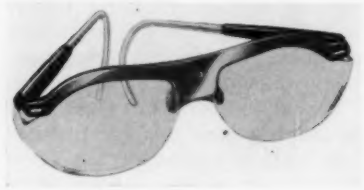
For details, use **Key # EP-8** on inquiry card on page 1.

WELDERS & CHIPPERS GOGGLES

Two new American Optical coverglas goggles for welders and chippers are said to fit 99% of the users. In addition to fitting over all types of prescription spectacles, the goggles utilize standard 50 mm. round lenses, to reduce lens stocking.

The chippers goggle, No. 325, has perforated aluminum side shields for direct ventilation, adjustable leather bridge, and is available with either a rigid bar bridge or adjustable rigid bridge. It is supplied with clear lenses. The welder's model, No. 329, is of identical construction except for indirectly ventilated side louvres. It is supplied with Filterweld No. 5 shade lenses for protection against injurious light radiation, glare and flying sparks. Both frames are cellulose acetate.

For details, use **Key # EP-9** on inquiry card on page 1.



NEW TEMPLE HOOKS

Smooth, pink plastic temple hooks have been adopted as standard ear pieces on all Watchemoket Optical Co. Tuc-Away goggles with plastic Retrax temples. They are designed to provide greater safety, a more comfortable behind-the-ear fit and a more attractive appearance. These new hooks slide in and out of the temples for easy adjustment by the wearer and, once adjusted, they hold firmly in place with maximum comfort and minimum pressure. This feature and the Tuc-Away universal nose bridge make it possible to stock one size goggle and fit all workers quickly and perfectly. This goggle also features optically correct, interchangeable, heavy impact lenses which snap in and out of the frame for easy replacement by the wearer. These lenses are available with integral side shields for added protection.

For details, use **Key # EP-10** on inquiry card on page 1.

EYESHADE SPECTACLE

Elimination of overhead glare, combined with style and comfort, makes the Eyeshade Spec suitable for eye protection where overhead lighting creates an additional problem. Introduced by the United States Safety Service Co., the spectacle adequately shades the eyes from above while the one-piece optical plastic lens gives full protection from impact. Both the regular and sideshield models have one-piece lenses which can be easily replaced without tools.

On the sideshield models, the shields are an integral part of the lens, curving around the face to afford suitable side protection. The self-adjusting nose piece is soft and comfortable. Regular lenses as well as sideshield lenses are furnished in either clear or medium green. The unit is designed to meet rigid Federal Specifications for optical qualities and impact resistance.

For details, use **Key # EP-11** on inquiry card on page 1.

UNIVERSAL-FIT SAFETY GLASSES

Universal-fit safety glasses, from Willson Products Div., Ray-O-Vac Co., have a patented bridge design that fits 95% of all faces. It was developed to meet a need in industry for an effective eye-protection program without large inventory and individual fitting by trained personnel. Nose pads and rounded universal bridge distribute the weight of the MonoSpec glasses and assure comfort even with all-day wear. Correctly fitted glasses can be supplied on short notice from a very small inventory to new employees, or as a replacement for a broken pair. This avoids lost production time due to accidents and carelessness. Glasses available with plastic-cable temples or metal spatula temples, and styled for streetwear appearance.

For details, use **Key # EP-12** on inquiry card on page 1.

WRAP-AROUND SIDE SHIELDS ON SPECTACLES

New wrap-around side shields and temple combinations are announced by Welsh Mfg. Co. Side shield, as integral part of temple, permits fast easy adaptation of safety spectacles to workers needs. Inventory requirements are reduced by eliminating need for stocking of wide range of temples and side shields separately. Spectacles with these combination temples and side shields lie flat resting on side shields when not in use, and preventing lens scratching.

For details, use **Key # EP-13** on inquiry card on page 1.

FULL-FACE GOGGLE RESPIRATOR

A full-face, one-piece combination goggle and respirator molded from flexible rubber has been introduced by American Optical. The new Drednaut features a ridge separating goggle section from respirator section. The resulting double facial seal stops exhaled air from reaching the goggle section, and is particularly advantageous for work in highly toxic areas. The goggle contains an impact resistant .060″ thick acetate lens; goggle mask conforms to the contours of the face. In one model series, goggle ventilation is designed to shunt liquids and dusts from the eye area. A gas-tight series is also available without ventilation ports.

The respirator section contains a twin cartridge combination. Thirteen sets of cartridges and filters are available for protection against dusts, mists, fumes, gases, sprays, vapors, insecticides, radioactive particulate matter or combinations of these hazards. Cartridges can be changed easily. A basal drainage feature in the respirator expels all collected moisture. Lightweight-mask fits over all types of personal glasses.

For details, use **Key # EP-14** on inquiry card on page 1.

ONE SIZE SAFETY GLASSES

Spectacle fitting problems are simplified by the Wilkie Optical Co.'s new Fitsall GW-60 plastic safety glasses. The company guarantees that the single bridge size incorporated in these spectacles will fit more than 90% of employees, eliminating the need to stock a large inventory of safety glasses. The spectacles are reported to be light, strong and durable. Available in clear or anti-glare green, and in spatula or cable temples.

For details, use **Key # EP-15** on inquiry card on page 1.

WELDERS' COVER GOGGLES

A new design in welders' goggles that utilizes angled lenses is embodied in Seesall Cover-Spec Goggles from Glendale Optical Co. With only a slight tilt of the head, the wearer is presented with a clear

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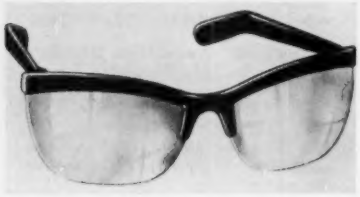
- ELECTRIC SWITCH and FUSE BOXES
- GAS VALVES
- STEAM VALVES
- ACID VALVES

Osborn SM
MANUFACTURING CORP.
WARSAW, INDIANA

(Use Key # R-11 on Inquiry Card on page 1)

view of the entire work area. Blind spots are eliminated. Added features include: comfortable fit over the new style, larger spectacles, indirect ventilation, flexible leather protective nose guard, lightweight construction. The angled lens design serves to eliminate neck and shoulder fatigue.

For details, use **Key # EP-16** on inquiry card on page 1.



PROTECTIVE SAFETY SPECS

A new, lightweight design of safety glasses to protect workers from the danger of flying objects is being marketed by General Scientific Equipment Company. The glasses combine attractive styling and featherweight protection coupled with low cost. Some of the semi-hazardous operations where Safety Specs are recommended include: spot welding, buffing, woodworking, handtool operations, inspection, protection of prescription glasses and home work-bench chores.

For details, use **Key # EP-17** on inquiry card on page 1.

STATIONARY PLATE RETAINER

Back plate loading is the principal feature of the new stationary front plate retainer introduced by Sellstrom Manufacturing Co., for its line of fibre and fibre glass welding helmets. According to the manufacturer, the feature is made possible by the use of newly developed plate holding springs and is the result of a recent survey which showed that welders prefer back loading. An extra large plate holding area is claimed for the new retainer, and ample room for cover plates, welding and safety plates and a magnifier for bifocal wearers. Maximum protection against the danger of electrical conductivity is afforded through the use of nylon plastic in its construction. The new retainer can be used on older styles with minor adjustments.

For details, use **Key # EP-18** on inquiry card on page 1.

VENTILATED FACE SHIELD

A new safety face shield that combines vision with ventilation has been developed by American Optical Co. Designed for use by industrial workers who require both visibility and face protection while working in heated areas, the Kool-Vent shield incorporates an optically correct acetate window in a fine metal 24 mesh screen, 8″ × 11½″. The shield is held securely before the face by means of an adjustable fibre headband, enabling it to be worn with or without regular prescription eyeglasses. Acetate windows are available in clear, green or aluminized.

For details, use **Key # EP-19** on inquiry card on page 1.

PLASTIC FRAME SPECTACLES

Improved plastic frame safety spectacles from Welsh Mfg. Co. have added strength in upper frame across bridge and in new butt temple construction. Extremely light in weight, Series 2400 has modern S-7 square shape lenses and is available in pink crystal or cordovan frames with spatula, comfort cable or metal paddle side shields. Series 2400T is two-tone version in black or seal brown on crystal.

For details, use **Key # EP-20** on inquiry card on page 1.

NEW WELDING HELMET

Protection against infra-red and ultra-violet rays, sparks, molten metal, and flying particles, is offered by Willson Products in their new narrow front welding helmet. The Willson No. 34 is made by the compression molding of non-warping, moisture-proof, heat resistant thermo-setting polyester resin, reinforced with glass fiber. The one piece, seamless shell provides exceptional strength, durability and longer life. The helmet is light in weight and form-fitting, and can be easily cleaned with soap and water.

Helmet's stationary molded glass holder is brought to the welding position with a nod of the head. It is a molded, integral part of the shell, providing a more durable helmet and the extra safety margin of a light-tight seal. Glass and coverplates are held securely by metal spring clips, and are easily removed for replacement. Compact shell design and location of the window provides wide visibility. There is ample space for wearing goggles and some types of respirators under the helmet.

For details, use **Key # EP-21** on inquiry card on page 1.

UNIFORM FIT SPECTACLES

EyeGard Adapta-Spec spectacles, manufactured by American Industrial Safety Equipment Co., are designed so that the bridge fits the facial contours of almost every person without adjustment. This eliminates the necessity for large inventories of various sizes and styles of spectacles. Frame is flesh colored durable butyrate plastic. Available with clear or green Amerilite lens or hardened glass lens. Choice of spatula or cable temples. Lightweight and comfortable, the spectacles can be worn for hours without discomfort.

For details, use **Key # EP-22** on inquiry card on page 1.

Fire Standard for Water-Cooling Tower

A new standard on water-cooling towers has been released by the National Fire Protection Association. Development of the standard was occasioned by a series of major fires in cooling towers, some of which are large structures representing values of as much as one quarter million dollars with extremely large losses possible due to production interruption.

Contrary to popular opinion, these towers do burn. While the hazard is obviously greater when towers are out of service, many fires have occurred when towers were in use. One factor in their burning is the large amount of wood in the construction, used extensively because ordinary metal quickly corrodes in the moist, warm atmosphere.

The NFPA standard covers location and construction of the towers, installation of electrical equipment, and methods of protecting towers.

Commonly located on roofs of large air-conditioned buildings, the towers are inaccessible for manual fire fighting, and unless provided with automatic sprinkler protection, present a serious fire problem. The problem has been growing with the rapid increase in air conditioning and in industrial processes requiring large quantities of cool water.

Exempted from the requirements of the standard are relatively small factory-built towers, which are not large enough to create any major hazard and which are generally built entirely of noncombustible materials.

It was developed by the NFPA Committee on Water-Cooling Towers, headed by Leslie A. Dutton of the Los Angeles County Fire Department and including representative public officials, insurance people and delegates from the Cooling Tower Institute. The Association's 1959 Annual Meeting accepted the standard.

Copies are available (NFPA No. 214, 16 pages, 40 cents) from the National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass.

1960 Lighting Book

The 1960 Edition of the "RLM Standard Specifications Book for Industrial Lighting Units" includes three New Specifications for 1500ma units; D-4 Fluorescent Semi-Direct medium high mounting, SD-3AL Semi-Direct Aluminum and SD-3PE Semi-Direct Porcelain Enamel Units. In addition, the new 52-page book contains many upward revisions of existing specifications, including new high specifications for materials; new specifications for aluminum reflectors and added provisions for inspection and testing. All RLM fluorescent specifications now include, where applicable: 1-Grounding of all component parts; 2-Continuity of grounding throughout a continuous row; 3-Silver Plated Contacts in all "rapid start" Units; and 4-Synthetic enamel specifications for component parts covering rust inhibiting undercoating, adhesion and hardness.

The RLM Specifications Book is available to architects, consulting, illuminating and plant engineers, electrical contractors, distributors, buyers and specifiers of Industrial Lighting Units—without charge.

Requests may be addressed to: The RLM Standards Institute, Inc., 326 Madison Street, Chicago 6, Illinois.

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FIRST AID SPRAY *FOR BURNS*

FOILLE — the antiseptic, analgesic dressing — is indicated for fast, effective relief of pain from burns, sunburn, cuts, wounds and abrasions. Areas can be sprayed thoroughly to provide prompt patient comfort and eliminate painful swabbing. FOILLE fights infection and promotes healing. In 3 oz. and 10 oz. spray.

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(Use Key # R-12 on Inquiry Card on page 1)

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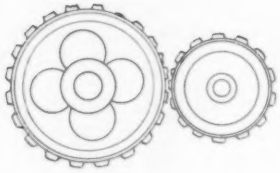
(Use Key # R-13 on Inquiry Card on page 1)

What do you think causes most industrial accidents

...Improper or inadequate safety equipment?

...Dangerous or flammable materials?

...Faulty Machinery?



The answer? — **none of these!** *In nine out of ten cases the cause is employee indifference.*

You can cut down on employee carelessness in *your* plant — make your employees more accident-conscious. It would help lower your accident rate *and* your compensation costs.

YOUR SAFETY NEWS will help you achieve these objectives. It's a colorful 4 page safety house organ that effectively uses a light, "comic strip" style to promote safe working habits. It makes safety interesting, *practical* and down to earth. And, just as important, it covers potential accident hazards at home, in transit and on the job.

Remember, too, that using YOUR SAFETY NEWS to prevent just *one* accident will more than pay for its low yearly cost.

Yet, you'll be pleased to know that you can order YOUR SAFETY NEWS *for as little as 3 cents a month* for each employee!

HERE'S WHAT A TYPICAL ISSUE LOOKS LIKE...

SEND THIS PERSONAL SAFETY MESSAGE TO EVERY ONE OF YOUR EMPLOYEES.

- Safety is made appealling . . . vivid . . . engaging . . . colorful!
- Each worker clearly sees how safety benefits him . . . how doing his part helps others!
- You get enthusiastic safety cooperation instead of tolerance . . . from every employee . . . every month!

HOW TO ORDER:

YOUR SAFETY NEWS may be ordered with either the standard imprint or with your Own Special Imprint. The standard imprint reads "PLEASE COOPERATE FOR THE SAFETY AND HEALTH OF ALL . . . signed . . A SAFE WORKER."

You can personalize YOUR SAFETY NEWS with the name of your firm and the name or facsimile signature of a company representative as illustrated. Give full instructions for your Special Imprint on the order blank below:

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NOTE: Although a personal signature is effective, some firms substitute: SAFETY DEPARTMENT, YOUR SAFETY COMMITTEE, A SAFE WORKER, etc.

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Ridiculous, you say. Delay can't *kill* anyone. It isn't a disease.

Yet last year, of the 250,000 Americans who were cancer's victims, 75,000 died *needlessly*. 75,000!... the populations of cities like Charleston, Santa Monica, or Racine. They might have been saved ... but they put off seeing their doctors until it was too late. Their story is told in our dramatic film "The Other City" ... a film which can save thousands of lives. Perhaps your own.

It teaches you the seven danger signals by which early cancer often reveals itself, and emphasizes your need for an annual health checkup as your best insurance against cancer.

"The Other City" is available, without charge, for showing at your church, your club, your community center, plant or office.

To arrange to see this and other life-saving films, made possible by your contributions, call the Unit of the American Cancer Society in your community or write to "Cancer" in care of your local post office.

AMERICAN CANCER SOCIETY

Maintenance Tips
(from page 16)

disposal. Lumber saw ends may be shipped to the Reclamation Department incinerator in similar metal tote boxes.

Larger size scrap lumber, miscellaneous crates, fibreboard boxes, waste paper and garbage are placed in very large metal boxes which have been designed for transportation and unloading by a specially equipped motor truck which delivers the collected materials to the incinerator sorting and charging floor.

Waste coolants and some waste oils are delivered by the vacuum tank trucks to large liquid tight transportation tanks which are set in pits in selected locations. These tanks are transported to the industrial liquid wastes treatment plant and unloaded by the specially equipped trucks previously referred to. A large part of the waste oils are delivered to the Reclamation Department in conventional steel drums for commercial disposal.

Thick sludges, miscellaneous floor sweepings, and power sweeper cleanings are placed in metal tote box containers which are shipped by semi trailer trucks or industrial railroad to the Reclamation Department which dumps these materials into the incinerator ash pit for more convenient disposal by tractor endloader and rubber tired drop bottom wagon to the refuse dump area.

The street sweeper is equipped with a dirt box that is transported to and unloaded at the incinerator ash pit by the previously mentioned specially equipped trucks.

Foundry refuse materials are loaded into rubber tired drop bottom wagons by tractor endloaders at several collection points. A major part of the foundry refuse sand is gravity loaded into the rubber tired wagons from overhead hoppers for delivery to the land-fill dump.

Snow Removal Operations

Where full access to extensive outside storage areas and adequate transportation facilities between such areas and manufacturing buildings is essential for uninterrupted production operations, it is advisable to plan for snow removal operations in advance of the storm season for all areas of the country where snowfall can be expected to exceed one inch depth per storm.

Plans for snow removal procedures to be used in case of several depths and types of snow fall should be worked out so that the proper materials, manpower, and equipment can be arranged far in advance. Snow falls to 2", 2" to 4", and above 4" are convenient divisions for planning purposes. Additional modifications should also be worked out for freezing rain or high wind conditions. Also coordination plans should be established with municipal, county, and state street, highway, and police departments so that street cindering, snow plowing, and traffic directing activities will all operate to bring the plant employees to work with a minimum of delays.

Where a large proportion of the employees of a manufacturing plant must travel over bridges spanning a commercial waterway or must travel up or down steep hills, traffic delays can cause extensive loss of plant production.

Advance plans should spell-out the responsibilities and functions of the operations supervisors. The quantity, location, operating and servicing procedures for all equipment to be used should be explained. The plans should include maps showing the various areas of responsibility, equipment storage locations, preferred equipment travel patterns, salt storage locations, cinder pile locations, and snow disposal areas. A directory of supervisory personnel, operating personnel, and governmental officials is a desirable part of the plans book. Advance arrangements should be made with local contractors for supplemental use of their equipment and manpower in cases of unusual conditions which cannot be handled by the available plant and governmental equipment.

The snow removal coordinator should arrange to receive all storm warning and weather reports during the snow season, and he should be certain that all snow removal equipment is kept in a constant state of readiness for cold weather operation.

Typical equipment used in snow removal operations includes hydraulic drive rotary brooms mounted on farm type tractors,

cinder spreaders, salt spreaders, dump trucks, motor graders, truck mounted snow plows, bulldozers, end loaders, conveyor type snow loaders, rubber tired scrapers, and radio equipped patrol trucks.

Lawn Care

Lawn care needs will vary from a simple low cost operation for small lawns without landscaping up to a complex higher cost operation when extensive landscaping and major lawn areas are involved. Where high quality landscaped lawns are deemed desirable, it is recommended that professional consultants be obtained to advise on layout of lawns, choice of plantings, planting procedures, cultivating, fertilizing, watering, mowing and spraying practices.

From an address presented at the 11th Plant Maintenance & Engineering Conference. Picture by courtesy of Allied Chemical Corp.

Wire Cloth Standard

Standard practices for the manufacture of industrial wire cloth are given in a Recommended Commercial Standard now being circulated to the industry by the Commodity Standards Division, Office of Technical Services, Business and Defense Services Administration, U. S. Department of Commerce, for consideration and general acceptance.

The standard covers the sizes, types, and quality requirements of industrial wire cloth for general purposes. It also establishes certain principles of manufacture and trade practices for the mutual benefit of all concerned. The standard was requested by the Industrial Wire Cloth Institute. After sufficient endorsements are received from representative industry organizations, it will be published as a voluntary standard of the trade.

Copies of the standard, entitled Recommended Commercial Standard for Industrial Wire Cloth, TS-5476, are available upon request from the Commodity Standards Division, Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C.

Safety Pays— for Real

The safety department of Pacific Plywood Co. and subsidiaries of Dillard, Ore., has worked out a new concept in safety so novel it has copyrighted the idea.

Using the slogan, **"Caution Pays You,"** the new safety program has been launched under the direction of Safety Director Bob Young.

Caution is the keynote of the plan, but not only does it work on the basis of preaching caution, the idea has gone one step farther: It actually pays its participants, said Young.

Under the plan the employees are rewarded with additional income based on monthly company contributions, if they can turn in a safety-free year. An annual cash award is made. It is known as the Safety Dividend Account plan.

Helping to put the plan into effect is a newly created character, Herman I. (Izzy) Cautious who will demonstrate various ideas behind the campaign in signs and posters all around the plant.

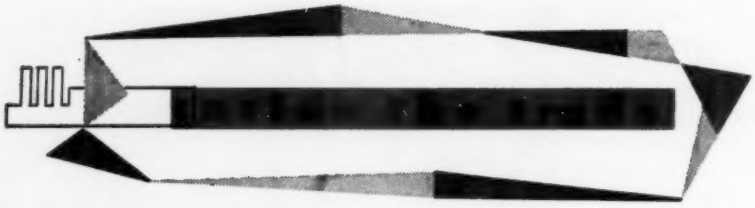
Another phase of the campaign is a program of monthly letters sent to homes of workers.

As the program progresses there will be added benefits for those maintaining accident-free records.

Young states, "We are adapting the word 'Caution' as a keynote idea in our campaign because we feel that where there is caution, there is safety—that safety actually is a by-product of caution."

To make the plan more effective, the safety director will ask employees from each segment of its operation to serve on the safety committee. The duties of this committee will be to analyze each accident that has occurred since the last regular meeting and to take the necessary steps to insure against further accidents of the same nature.

Considerable interest has been shown in the plan by outside industries, and many inquiries have been made about its operation even before it has been started. The idea, said Young, is to give the employees added incentive to be cautious all the time, not just part of the time. If that idea can generally be sold, it will lead to more caution on the job as well as elsewhere, he concluded.



A. L. Lewis and *F. J. Shepard, Jr.*, co-founders of *LEWIS-SHEPARD PRODUCTS, INC.*, Watertown, Mass., are celebrating their 45th year as pioneers and active business partners in the manufacturing and sales of materials handling equipment. Founded in April 1915, in Boston, Mass., Lewis-Shepard Products, Inc., is respected not only for the advanced designs but for the high quality of its products which have been maintained by this dual management team.

Mr. Lewis, the salesman, and Mr. Shepard, the designer, still continue to direct the growth and development of the L-S organization. This unique business partnership has continued through its 45 years of growth so that today Lewis-Shepard is recognized as one of the largest manufacturers of electric fork lift trucks and offers a complete line of handling equipment in the industry.

The Liberty Bell Mfg. Co., Swainsboro, Georgia has been purchased by *THE PHILIP CAREY MFG. CO.*, Cincinnati, Ohio, major manufacturers of building construction, maintenance, ventilation and industrial products. Present plans are for Carey to operate Liberty Bell as a division of the parent company. The new division manufactures and sells doorbells and buzzers, mechanical and electric door chimes, transformers, push buttons and driveway alarm signaling systems.

Richard B. Hazard, vice president of *Raybestos-Manhattan, Inc.*, Passaic, N. J., has been re-elected president of the *MECHANICAL PACKING ASSOCIATION, INC.* Other officers and posts to which they have been re-elected are: *J. Bert Sewell, Garlock Packing Company* —Vice President; *Fred H. Luhrs*, Association Secretary-Treasurer; and *George Link, Jr.*—Counsel.

The Mechanical Packing Association, established in 1933, is the national trade organization of the mechanical packing industry. Its membership is composed of both the leading companies in the industry and a large number of the industry's smaller organizations.

After several years' participation in the Canadian materials handling market through distributors, *HARTMAN METAL FABRICATORS, INC.*, Rochester, New York, have formed a Canadian company, *Hartman Metal Fabricators, Ltd.* Realizing the potential in the fast growing market in Canada, Hartman purchased the plant and assets of Welded Products Ltd., in Caledonia, Ontario. *J. J. Craddock* has been appointed manager of the Canadian subsidiary.

C. L. Holbert, President, *H. K. PORTER COMPANY, INC.*, Pittsburgh, has announced the appointment of *Leslie B. Hartnett* as General Manager of the Company's newly acquired Cleveland subsidiary, *The Patterson-Sargent Co.* manufacturer of paints for industry and the home. Hartnett has been President of the Valspar Corporation, Ardmore, Pa., for five years. He was previously Eastern General Sales Manager of Certainteed Products Corporation, Ardmore, for two years following eighteen years of other Certainteed assignments at the district sales level. Hartnett is a native of St. Louis and attended Washington University.

Edward J. Grant has been appointed general manager and acting head of the service products division of *S. C. JOHNSON & SON, INC.*, it was announced by Howard M. Packard, president. Grant, who has been service products sales manager, will have over-all responsibility for the expanding operations of the division, and will serve on the company's management committee, Packard said.

OXY-CATALYST, INC., Devon, Pa., manufacturer of catalyst exhaust purifiers, announces the appointment of *Freeman Equipment Co.* of Miami as the Florida representative for their line of purifiers for gasoline, LP Gas and diesel powered industrial vehicles. The Freeman Company, with Sales & Service offices in Jacksonville, Miami and Lakeland, has been in the material handling and industrial plant equipment field for many years.

The appointment of *Akron Welding & Spring Co.*, 940 S. High St., Akron, Ohio, as a distributor for its heavy-duty industrial flooring products was announced by officials of *WALTER MAGUIRE COMPANY, INC.* The new distributor will serve Summit, Portage, Medina, Wayne and part of Stark counties, in northeast Ohio.

During the 1960 Philadelphia and New York Safety Conferences, *INDUSTRIAL PRODUCTS COMPANY*, Philadelphia, Pennsylvania, celebrated its fortieth anniversary in the field of manufacturing and distributing safety equipment for all industries. Incorporated late in 1919 by E. Fred Shipman, still President of the company, IPCO began its service and counseling to industrial safety early in 1920. IPCO pioneered many of the modern concepts of providing safer working conditions and environments for plant personnel.

Elevation of three to vice president status at the *Le Roi Division* has been announced by Frank J. Zielsdorf, *WESTINGHOUSE AIR BRAKE CO.*, vice president and general manager of the division. The new appointments are: *R. H. Koehler*, from general sales manager to vice president, sales; *J. R. Gavigan*, from manager of administration & accounting to vice president, planning & administration; and *L. E. Dondero*, from manager of West Allis, Wis., plant to vice president, manufacturing.

The appointment of *Charles F. Bishop* as General Sales Manager of *BRIGHT STAR INDUSTRIES*, manufacturers of dry batteries and flashlights, was announced by Robert Frost, President. Mr. Bishop was General Manager of Public Attitudes Corporation of New York City and was previously with National Carbon Company, his most recent position being Division Manager. Also announced is the appointment of *Kim P. Jack* as Assistant to the President.

Three new assignments in the *International Division* of *MINE SAFETY APPLIANCES CO.*, have been announced by L. N. Short, export manager. Appointed were: *Robert S. Joyce* as manager, instrument sales; *T. J. O'Neill* as subsidiary services co-ordinator; and *John E. Hogan* as manager of the Division's Latin American sales.

Frederick J. Artz, director of rehabilitation services for *ZENITH RADIO CORP.'S* hearing aid division, has been appointed sales manager for special instruments. Artz will direct distribution, sales, and merchandising of Zenith's diagnostic audio analyzer, a hearing testing device, and other new products of

this type expected to be introduced during the year.

Artz joined Zenith in 1957. Prior to that time he was executive director of the Seattle, Washington, Hearing and Speech Center. He is a graduate of the University of Washington and holds a B.A. degree in audiology and speech therapy.

Yale Materials Handling Division, THE YALE & TOWNE MFG. CO., has promoted *Newcombe C. Baker, Jr.* to manager of marketing services and *J. Henry Brown* to advertising, publicity and sales promotion manager, according to an announcement by *Louis W. Jander*, general sales manager.

In the newly created post, Baker will supervise all advertising, sales promotional and market research activities for the division, manufacturing industrial lift truck, tractor shovel and hoisting equipment. He joined the Yale advertising department in 1953, as special sales promotion manager, responsible for the Yale Travelling Road Show, and was promoted to manager in 1954. Brown, previously publicity manager, has been associated with Yale Materials Handling Division since January, 1955.

The former *A. O. Smith Foundry* at Huntington Park, California has been purchased by *AMPCO METAL, INC.* and will become the center of expanding West Coast activities for the Milwaukee producer of bronze alloys about August 1, 1960 according to J. D. Zaiser, Ampco president.

Ampco's present plant at Burbank, California will be sold in connection with the transfer. Occupied since 1944, this location did not permit necessary expansion.

Zaiser said almost 50 percent greater plant floor space will be gained by moving to Huntington Park, which is in the Los Angeles area. Ampco plans to construct a new office building on the property.

Donald Diehl has joined the Industrial and Marine Division, *WALTER KIDDE & COMPANY, INC.* (Belleville, N. J.). He will serve as Senior Project Engineer. Mr. Diehl comes to Kidde with twenty years of experience in the fire safety equipment field. He formerly was Director of the Research and Development Center and Chief Electrical Engineer with the Fyr-Fyter Company, and previously had acted as Sales Engineer and Assistant Chief Engineer with the C-O-Two Fire Equipment Company.

Max Isaacson, president of *THE GLOBE INDUSTRIES, INC.*, disclosed recently that *Laurens L. Battis* has been named Eastern Regional Sales Manager by Globe's Special Products Division of Dayton, Ohio. Mr. Battis will be headquartered in Kinnelon, New Jersey, and his responsibilities will include application engineering of Globe's specialized resuscitation and breathing protection equipment. Coupled with this, he will develop and train distributors of Globe products.

ANSUL CHEMICAL COMPANY, Marinette, Wisconsin, announces the appointment of *James A. Bowman* as Advertising and Sales Promotion Manager, succeeding *Brad Sebstad*, who has resigned to establish his own advertising agency, *Brad Sebstad, Inc.*, in Menominee, Michigan. Sebstad will serve clients throughout the midwest, including Ansul.

Ralph R. Wilkins, shown with Customer Service Manager, Nancy Walters.

May, 1960, marks the 20th anniversary of service to eye-safety programs by *Ralph R. Wilkins*, president of *THE WILKINS CO., INC.*, Cortland, N. Y. In 1940 Mr. Wilkins started distributing a lens cleaning solution named K-LENS-M from his cellar stockpile. The product found an eager market and Wilkins was in business.

Today, 20 years later, the company manufactures lens cleaner liquid, anti-fogging liquid, dispenser cabinets and lens tissue. The company's modern plant now covers over 16,000 sq. ft. of floor space with three additions since 1947.

Thomas L. Fitzgerald has been named field sales manager for the service products division of *JOHNSON'S WAX*, it was announced by Edward J. Grant, division general manager. Fitzgerald will direct sales of Johnson's maintenance, industrial and agricultural products.

Charles B. Quarnstrom, president, *COATED ABRASIVES, INC.*, announced that transfer of manufacturing and headquarters operations from Milwaukee, Wisconsin to the Detroit Metropolitan area has been completed. The company manufactures a full line of abrasive specialty items and engages in coated-abrasive application research. The company's new manufacturing plant is located in Warren, Michigan. General staff offices are at 11920 East Eight Mile Road, Detroit 5, Michigan.

Jack Turer, Technical Director of the *Textile Chemicals Division of SONNEBORN CHEMICAL AND REFINING CORP.*, has been named Chairman of the Committee for Evaluating Static Electricity on Textiles of The American Association of Textile Chemists and Colorists. Announcement of the appointment was made by C. A. Sylvester, Chairman, Technical Committee on Research of the A.A. T.C.C.

The Committee on Static Electricity is in the process of comparing interlaboratory surface resistance data of standard fabrics. It has adopted the resistivity method for evaluating surface electrical properties of all textile yarns.

Appointment of *Joseph M. MacDougall* as assistant advertising manager of the *Paint and Brush Division of PITTSBURGH PLATE GLASS COMPANY* is announced by M. J. Batenburg, director of information services. A native of Boston, Mr. MacDougall joined Pittsburgh Plate in 1958 in an advertising capacity for the Paint Division. He formerly was associated with the Monsanto Chemical Company of St. Louis for several years.

Safety Appointments

Harry J. Delfs, a safety engineer for Automatic Electric Co., Northlake, Ill., has retired after a service career that began in 1924. Delfs started with the subsidiary of General Telephone & Electronics as a machinist, and became safety engineer a year later. For the past ten years he also served as secretary of the employees' credit union.

Last month, Delfs and his associate in the safety department, Eugene Dymek, were honored by the National Safety Council, receiving an Award of Merit for the company's record of 2,808,200 manhours of work without a disabling injury. This covered the period between November 17, 1959, and January 15, 1960.

Bernard L. Taylor of Clifton, N. J., former Safety Director, Headquarters Seoul Area Command, Korea, has been named by Headquarters First United States Army to be Safety Program Administrator and Assistant to the First Army Safety Director.

Mr. Taylor was the first Safety Director of the Seoul Area to receive a Sustained Superior Performance Rating. The award was presented for service performed from August 1957 to July 1959.

During the past seven years he performed safety assignments for the U. S. Army Far East. He was Safety Director of the Japan Central Exchange from March 1953 to June 1954. From June 1954 to January 1956 he was Chief Inspector, Safety Division of Camp Yokohama. In Tokyo he was assigned as Chief, Inspection & Education Branch, Headquarters Central Command, from January 1956 to January 1957, and later became Safety Director of Camp Drake.

He is a graduate of New York University's Safety Course and of Northwestern University's Traffic Institute.

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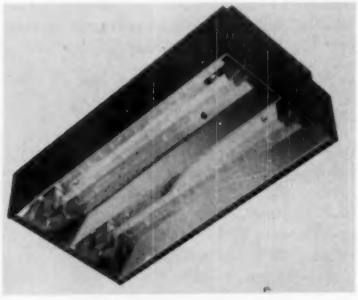
To obtain descriptive literature of products listed, use Reader's Inquiry Card. Write in code number given each item. Send written requests to: Service Dept., SAFETY MAINTENANCE.

what's new for MAY

INDUSTRIAL SAFETY CONSULTANTS

(Use Key # 695 on Inquiry Card on page 1)

SAFETY ENGINEERING and insurance inspection services are being offered to industry and insurance companies in Florida by a new organization, Industrial Safety Services. The consultant firm is piloted by Joseph W. Goodwin and John B. Moore, who have 32 years of experience between them. Mr. Goodwin is a specialist in insurance loss prevention and industrial safety work. Mr. Moore is well known in the area of chemical safety and has activated and guided safety programs in industry. The concern plans to expand its coverage to adjacent territories as additional personnel become available.



INFARED HEATING UNIT

(Use Key # 696 on Inquiry Card on page 1)

DEVELOPMENT OF new infrared heating units designed to make reflected radiant heating practical for almost all indoor and outdoor applications has been announced by Luminator, Inc. The units are designed with highly efficient reflectors for use with General Electric T-3 Tubular Quartz Infrared Lamps having filament temperatures in excess of 4,000°F. These lamps convert approximately 85 percent of their energy into radiant heat similar to that of the sun. The Luminator units then project this heat in the same manner that light is projected and instantly warm people and surfaces directly. The units are designed so that the projected heat can be directed to specific areas. This eliminates the need for using economically wasteful space heating systems.

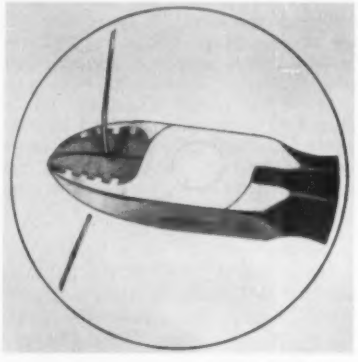
Luminator Units are designed for use in such high-bay buildings as aircraft hangars, maintenance shops, warehouses, etc., where they can be installed to economically project heat only to specific work areas where warmth is required. Outdoor applications include loading platforms, grandstands, walkways, entrances and other exposed areas. Regardless of surrounding temperatures, anyone stepping within the projection area of the unit immediately feels comfortably warm. The units are ceiling mounted and require no floor space, and maintenance is said to be insignificant. Available as one-lamp fixtures ranging from 500 to 5,000 watts; 2-lamp fixtures ranging from 1,000 to 10,000 watts; and 3-lamp fixtures ranging from 1,500 to 15,000 watts.

POCKET GEIGER COUNTER

(Use Key # 697 on Inquiry Card on page 1)

A FIVE-OUNCE transistor geiger counter, the Gelman-Wallac Sparrow, is being marketed by the Gelman Instrument Co. The instrument gives instantaneous radiation warning to atomic workers and researchers. Within a split-second after existence of radiation danger, the unit signals workers to evacuate immediately. In spite of elaborate alarms and dosimeters, the manufacturer states, many atomic workers have recently been involved in nuclear accidents resulting in serious injury and death. Central warning systems don't always respond fast enough.

The Sparrow slips into the worker's shirt pocket to maintain constant guard. When radiation reaches 1mR/hr, the speaker crackles violently. The tone of the speaker changes to a smooth buzz at 10 mR/hr and then to a high-pitched whine at 100 mR/hr. Unit operates on a set of small flashlight batteries which last for 2-3 weeks of normal usage.



NEW CUTTERS GRIP ENDS OF CUT WIRE

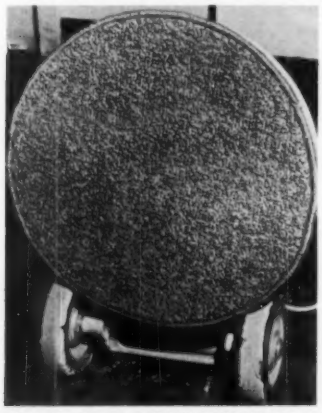
(Use Key # 698 on Inquiry Card on page 1)

NEW PLIERS featuring a ribbed or molded groove of hard plastic, are being produced by the Utica Drop Forge & Tool Co. The molded groove of the Cushion Throat pliers helps holding action by giving clearance at cutting edges. It also acts as a safety device in electrical and spring wire cutting, gripping the short end of the wire during and after cutting, thereby preventing injuries to eyes and punctures or scratches of the skin caused by flying wire ends.

CONTAMINATION-PROOF SHOE COVERS

(Use Key # 699 on Inquiry Card on page 1)

DURABLE plastic shoe covers said to afford full protection against contamination from radioactive materials are available from Defense Apparel. The makers report that the shoe covers meet the exacting specifications of the Atomic Energy Commission. They are waterproof, lint-free, dustproof, and washable. Protection from grease, oil and most acids is also assured. These plastic shoe covers are strong yet lightweight and are made with non-slip soles as an added safety measure. Available in different styles to fit special needs.



NEW FLOOR POLISHING PADS

(Use Key # 700 on Inquiry Card on page 1)

DOUBLE-DUTY pads which do the work of both steel wool and lambs wool pads by removing scuffs and buffing floors in one operation have been introduced by Bryn Mawr Products. The working surface is a blend of 30% virgin nylon and 70% virgin wool. The nylon content creates static electricity that gets off scuffs and hardens floor finishes, and the resilient wool provides the polishing action. The Hi-Lustre polishing pads are backed with a special non-slip vacuum-grip backing that clings to brushes and driving pads to prevent sliding or creeping. The pads have all-around overlocked edges that won't ravel and that keep pad and backing permanently joined. Non-creasing and curling, they are available in sizes to fit every floor machine from 12" to 22" in diameter. May be used on waxed, waxless and polymer finishes, as well as on untreated and unfinished floors.

NEW SPACE DEODORIZER

(Use Key # 701 on Inquiry Card on page 1)

A DEODORIZER designed to neutralize odors and freshen the atmosphere is being offered by Aireactor Corp. Unlike some odor combatants, which attempt to mask one odor with another, ostensibly more pleasant one, Aireactor works on the odor-opposite or ion-exchange principle, similar to the deodorizing effect of masses of green foliage in nature. It is not a perfume, but a formulation of non-toxic elements of plant life which cancel odors in the vapor phase. The company reports that its product causes a complete realignment of odor molecules, as well as releasing an element of freshness such as is associated with gardens. Non-flammable.

ALUMINUM SAFETY HAT

(Use Key # 702 on Inquiry Card on page 1)

A NEW ALUMINUM, light-weight safety hat, to fill basic head protection needs, is available from Willson Products. Constructed with full brim for added protection to neck, ears, and shoulders, the sturdy, aluminum shell is formed in one piece from a tough alloy, and is ribbed for added strength. Edges are completely rolled for extra rigidity in the brim. The hat may be worn with comfort for long periods. It is sun reflecting to provide cooler wearing in the hottest weather. The shell is supported on Geodetic suspension, which dissipates impact shock waves over a wide area of the head. Suspension is constructed to conform to the head of any worker and resists the tendency of the hat to shift, tilt, or crash against the skull under angular blows. A minimum of one and one-fourth inches is maintained between the top of the head and the shell.

GERMICIDAL PAIN RELIEVER

(Use Key # 703 on Inquiry Card on page 1)

A COMBINATION pain reliever and infection preventive is being offered by Certified Laboratories. The product, Aid, is said to give instant relief from pain of scalds, abrasions and wounds, and to promote faster healing with minimal scarring through the use of a bactericidal known as G-11 Hexachlorophene. The company reports that its product has also proved effective in the treatment of sunburn and dermatitis and the itching sensation common to both. Aid is packaged in aerosol form for efficient application, and can be washed off with plain water.

CHEST-WAIST SAFETY BELT

(Use Key # 704 on Inquiry Card on page 1)

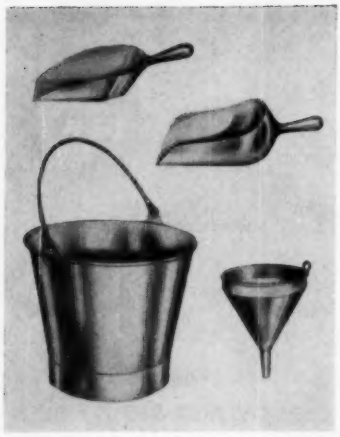
AFTER INTENSIVE research and testing, the Rose Mfg. Co has developed what they believe to be the safest construction belt in the world. This belt, designed for high workers, meets the requirements of the American Society of Safety Engineers for eliminating body injuries caused by the shock load resulting from a fall. The shock load is divided between the chest and the waist, greatly reducing the danger of injury from impact. It also eliminates danger of slipping out of the belt. The chest part of the belt may be worn loosely to permit easy breathing while the waist part should be worn snugly. Even though the belt has great strength, it weighs only two pounds.

WEATHERPROOF FLUORESCENT FIXTURE

(Use Key # 705 on Inquiry Card on page 1)

TYPE HLG, a weatherproof fluorescent fixture from Crouse-Hinds Co., is especially designed for outdoor installation in such locations as tunnels, underpasses, loading docks, and areas under sheds, canopies and cornices. It has many indoor applications as well, such as lighting indoor swimming pools from the ceiling.

The fixture is sturdily constructed and has a shatterproof plastic lens. The housing is an extruded aluminum channel with cast aluminum end caps. Door opens quickly by turning three catches. Reflector fastens securely and removes quickly without the use of tools because of continuous flange fitting into continuous groove in housing. All alloys are corrosion-resistant and all joints are gasketed.



CORROSIVE RESISTANT PAILS, ETC.

(Use Key # 706 on Inquiry Card on page 1)

A WIDE RANGE of chemically pure, stainless steel pails, scoops and funnels designed for handling food and chemicals is being marketed by Star Stainless Screw Co. Resistant to most chemicals and corrosive media, the implements will not contaminate food products or chemicals. The seamless pails with chimes are available in 5 sizes—from 10 to 20 qts. The scoops in round and flat bottom styles come in 1 pint to 6 quart sizes. Funnels available in 1 pint to 2 gallon sizes.

WALL CLEANING MACHINE

(Use Key # 707 on Inquiry Card on page 1)

A NOISELESS and dripless wall and ceiling cleaning machine, reported capable of cleaning 100 square feet in six minutes, is being marketed by the Alan Mfg. Co. Lightweight and non-electrical, the Wall-King consists of a dryer; two rust-proof magnesium trowels; two 20' sections of non-kinking rubber hose, which join the trowels to the solution tanks; and dual solution tanks of stainless steel, which hold 2 gallons of special liquid cleaner. They are held together within one frame, with a convenient carrying handle in the center. The machine is said to leave no streaks or splotches, and to eliminate problems of splash protection. It requires no previous experience to operate.

CLOTHING FOR LIQUID OXYGEN HANDLING

(Use Key # 708 on Inquiry Card on page 1)

A SPECIAL GARMENT to be worn when handling liquid oxygen has been designed by M. Setlow & Son, Inc. The garment, made of vinyl coated glass cloth, offers not only complete coverage for the head and body, but opens down the back. The hood can also be slipped forward when not in use. The company reports that the U. S. Marine Corps discovered the material to be impervious to liquid oxygen, as well as acid and abrasive resistant.

NEW INHALATOR-ASPIRATOR

(Use Key # 709 on Inquiry Card on page 1)

AN ECONOMICAL oxygen-supplied rescue breather named the Samaritan is being manufactured by Globe Industries, Inc. The resuscitator-demand inhalator-aspirator, when used as an oxygen resuscitator, is not dependent on compressed oxygen as a source of power to operate a mechanical resuscitator valve. The unit may be used for mouth-to-mask resuscitation after the oxygen cylinder is depleted and if a spare oxygen cylinder is not immediately available. Apparatus is a breathing assistor which may be used with or without oxygen to aid people who are having difficulty in breathing caused by asthmatic attacks or other illnesses, or by the inhalation of irritating gases.

The Samaritan may be used as a demand inhalator for breathing patients after they have been resuscitated, but must be continued on oxygen. The patient receives oxygen at the rate he "demands." Unit also includes an aspirator to remove fluids, vomitus and mucus from the mouth and upper throat. Easy to carry, it weighs 26 pounds complete with fully charged cylinder.

FIXED TEMPERATURE THERMOSTAT

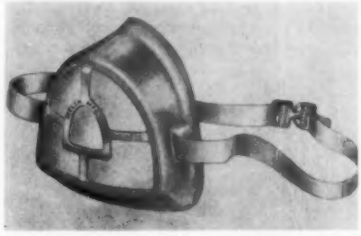
(Use Key # 710 on Inquiry Card on page 1)

DESIGNED TO provide protection in small areas, the N-Co-Stat heat detector, a product of Notifier, is a fixed temperature, resetting thermostat. It is available in three models covering limits of 135° to 250° F. Thermostat element consists of a bimetal disc and insulating plunger attached to a contact disc and spring. All contact points are gold plated. Operating element is enclosed in an airtight and waterproof housing provided with wiring terminals. Temperature actuated components close and open the circuit at the predetermined settings. For use in locations subject to rapid temperature fluctuations, such as boiler rooms, drying rooms, kitchens and similar areas where rate-of-rise can result in false alarms.

ANTI-GLARE WINDOW COATING

(Use Key # 711 on Inquiry Card on page 1)

A TRANSPARENT window coating which filters out glare and reduces heat and fading has been developed by Sun-Shield of New England. The coating is said to filter more than 45% of heat-producing infrared rays, providing better insulation. The product is also said to guard against fading materials through its high impedance of ultra-violet rays.



NUISANCE DUST MASK

(Use Key # 712 on Inquiry Card on page 1)

A LIGHTWEIGHT polyethylene nuisance dust mask, known as the Bantam, has been developed by the Welsh Mfg. Co. to offer protection in intermittent, non-toxic paint spraying operations, as well as from nuisance dust. The entire unit, consisting of outer and inner frames, filter and headbands, weighs less than one ounce. The polymer filter can be washed and reused, and is not affected chemically by water, soap, oils, detergents or perspiration. Mask filters minute dust particles and resists paint pigments.

IMPROVED DRY BOX GLOVES

(Use Key # 713 on Inquiry Card on page 1)

LEAD-LOADED dry box gloves, made by Charleston Rubber Co., are being offered in standard heavyweight and lightweight thicknesses, in several dimensions, styles and hand sizes. "Rad-Bar" gloves, manufactured of lead-loaded, seamless, milled Neo-Sol Neoprene by the multiple dip process, are designed for soft gamma shielding. Like all Charco dry box gloves, they are high voltage electrically tested to assure adequate protection. The gloves are of a density of 3.95 grams per cubic centimeter.

The company reports that test of Rad-Bar dry box gloves, conducted on Cad-

mium 109 at .087 Mev. show that the heavyweight glove, with 0.060" nominal overall glove thickness has a lead equivalent of 0.36 MM and the lightweight glove with 0.030" nominal overall glove thickness has a lead equivalent of 0.10 MM.

In the Charco process of multiple dipping, the inside and outside exposed surfaces of the gloves are built up of unleaded Neo-Sol Neoprene. This design protects the wearers' skin from contact with the lead-loaded interior portion and also provides maximum oil and chemical resistance.

NEW NON-SLIP WRENCH

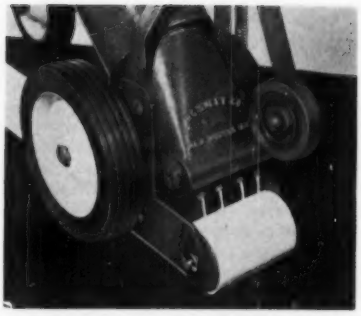
(Use Key # 714 on Inquiry Card on page 1)

CALLED THE Nutmaster, a new open end wrench applies its turning forces only on the flat faces of nuts or bolt heads; not on the corners. This new wrench, manufactured by the New Britain Machine Co., grips at four places on the flat portions, and makes it possible to turn off even badly worn nuts and bolts. The tool is lighter, less bulky, and has a slimmer head than conventional wrenches. Its positive grip reduces slippage and skinned knuckles. Precision-forged of alloyed steel. Most popular opening sizes are available.

METATARSAL FOOT GUARD

(Use Key # 715 on Inquiry Card on page 1)

A NEW metatarsal guard, designed to supplement protection provided by steel toe safety shoes, has been announced by the Albert W. Pendergast Safety Equipment Co. The Alpenco Metagard, of stainless steel construction padded with a heavy cushion of neoprene sponge, attaches through the laces of the shoe. It does not interfere with the flexing of the ankle, whether walking, bending, climbing, etc. Fits all sizes of lace type shoes.



NEW LINE MARKING MACHINES

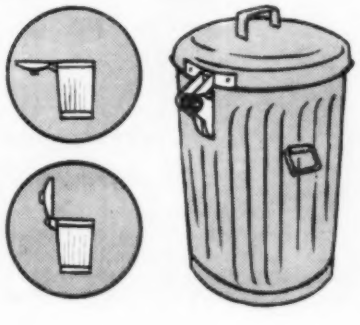
(Use Key # 716 on Inquiry Card on page 1)

MACHINES for making safety and parking lines are now available from H. C. Sweet Co. in two new paint capacity sizes to meet broadening needs of users. A new ¾ gallon Florline marking machine, it permits inexpensive line renewal for institutions, limited terminal areas and municipalities with district maintenance, as well as frequent marking and touch-up of safety aisles and parking areas. Equipped with adjustable line guide. The new 2½ gallon machine fills the needs for paint capacities between the regular 1½ and 5 gallon sizes. The Florline X model for making lines as close as ⅜" alongside aisles, curbs, etc., is also available in all sizes. Each features the multiple feed and roller application and is constructed of the same heavy duty materials.

HINGES FOR WASTE CAN COVERS

(Use Key # 717 on Inquiry Card on page 1)

TO PREVENT the loss of covers for garbage and waste cans and to prevent fires, an inexpensive hinge has been developed by Belco Eyelet Mfg. Co. to keep covers permanently attached to their receptacles. The hinge also features a spring-type construction which holds the cover in any position, vertical, horizontal or down the side. The units are easy to install and complete directions are included. Approved by sanitation and health officials, the use of the hinges prevents spillage of refuse and garbage, helps control odors, and prevents contamination by insects and rodents. By providing an attached cover, the unit also prevents spontaneous ignition of oily waste materials. Applications include factories, laboratories, machine shops, garages, restaurants, apartment houses and private dwellings.



WELDING AND GRINDING CURTAIN

(Use Key # 718 on Inquiry Card on page 1)

SAFETY SHIELDS for on-the-job protection during welding and grinding operations and for use as machine curtains or partitions are available from National Cylinder Gas Div. of Chemetron Corp.

The shields, combining light weight, compactness, and easy assembly, are available in four sizes ranging from 18 to 36 inches in height and from 42 to 72 inches in over-all length. They are made in three sections and can be assembled or taken apart in three minutes, according to the company. Construction is of tubular steel. Connecting rods are inserted into the open ends of uprights to form the frame and the curtains are fastened to the frame with heavy snap fasteners. The curtains, of heavy olive drab duck with flame-resistant finish, are guaranteed water- and mildew-resistant.

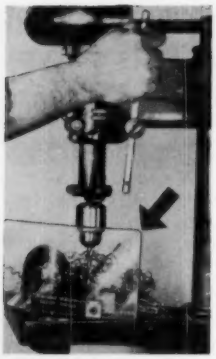
WATER SYSTEM CHEMICAL DISPENSER

(Use Key # 719 on Inquiry Card on page 1)

A NEW CONCEPT for feeding balanced chemical treatment into circulating water systems of cooling towers and evaporative condensers, the Chemicator, has been developed by the manufacturer, Erlen Products Co. The development is a small, lightweight, closed reservoir, mounted on the side of the equipment, through which a portion of the recirculating water flows.

On the upper portion of the unit a sleeve holds a weather-sealed plastic tube containing a sequence of variously formulated compressed chemical briquettes. These are made of polyphosphates and organic chelates to remove and prevent the formation of scale, organic corrosion inhibitors to remove and prevent the formation of rust, together with automatic pH, algae and slime controls. No injurious chromates or phenols are used. As the briquettes are gravity-fed into the water flowing through the reservoir, they slowly dissolve and are carried into the entire system.

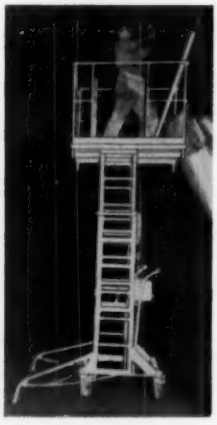
According to the company, there are no chemicals to weigh or mix, no acids to handle, and no noxious odors to endure. The Chemicator has no moving parts yet feeds the proper chemicals in precise amounts, silently and automatically. The flow of the recirculating water controls the system. Chemicals are fed only when the pump is in operation and only when they are needed, at a pre-determined rate required for positive control.



MAGNETIC SAFETY SHIELD

(Use Key # 720 on Inquiry Card on page 1)

AN INEXPENSIVE portable safety shield to protect operators of drill presses, lathes, milling machines and grinders, etc., is available from Better Specialties, Inc. Attached to the lower edge of the shield are two permanent ceramic magnets mounted by single eyelets, slightly off center. This permits a swiveling action, so that the shield may conform to any arc-like spot on a machine, and is mountable vertically, horizontally, or at any angle. Its transparency permits work to proceed uninpeded, while safeguarding the operator's eyes, face, hands and arms from bombardment by hot shavings, chips, etc.



TELESCOPING WORK PLATFORMS

(Use Key # 721 on Inquiry Card on page 1)

A NEW LINE of work platforms for overhead maintenance, painting, lighting, cleaning, etc., is announced by Atlas Industrial Corp. Only 6 feet 8 inches in height the platform raises to 11', 16' or 20', as required. Raising or lowering to any position is accomplished by cranking the handle. No erection is necessary.

Unit will pass through a 32" door opening, and the stock platform is 2 feet by 4 feet, or made-to-order measurements. The raising mechanism is a hand operated winch with self-locking worm gear held by two steel cables. This safe working platform is easily rolled. Outrigger brace prevents tilting or rolling. Sturdy all welded steel construction.

WOOD FIBER ROOF COATING

(Use Key # 722 on Inquiry Card on page 1)

A SPECIALLY formulated silicone additive which coats each long wood fiber in Tectum Roof Deck and makes it water repellent has been announced by the Tectum Corp. Much of the water damage to building materials is due to capillarity—the spreading of water through the material. Fiberguard reduces capillarity because water and the additive are not compatible. The development protects material in storage and during construction from damage and staining. Protection is also afforded against potential damage that might result from roof leaks at any time in the future. The additive is odorless, colorless and does not affect Tectum's insulation, non-combustible, structural, sound absorption, or light reflection values.

NEW SAFETY SHOES

(Use Key # 723 on Inquiry Card on page 1)

LONGER WEAR and increased comfort are claimed for their new safety shoes by Iron Age. The Highlander line of both oxfords and high shoes glove leather is tanned with Scotchgard brand leather protector. This treatment is said to result in leather that is more flexible at low temperatures; is more porous and so "breathes" better, and is more comfortable on the foot. It is also claimed to impart a superior resistance to water, acid, alkalies, mold and perspiration to assure that these shoes hold their shape and retain their original appearance for a longer period. They are provided with Goodyear Cobra oil proof soles and heels for safety underfoot.

DRY CHEMICAL EXTINGUISHER

(Use Key # 724 on Inquiry Card on page 1)

A COMPACT dry chemical fire extinguisher for protection of Class B (flammable liquids) and Class C (electrical) risks has been announced by American LaFrance. Designed for one-hand operation, Model PDC 2½B has the same fire-killing power as eight 1 or 1½ quart vaporizing liquid extinguishers. By squeezing handles together, a penetrating cloud of especially-prepared dry chemical is expelled under pressure to instantly smother blaze. The extinguisher requires no servicing unless used. Approved by Underwriters' and Factory Mutuals Laboratories and by U.S. Coast Guard. Unit has an effective discharge time of 10 seconds and may be recharged by refilling with prepackaged dry chemical and charging with air or nitrogen to 150 psi. Extinguisher weighs 4¾ pounds, and is supplied with mounting wall bracket.

SYNTHETICS FLAME PROOFER

(Use Key # 725 on Inquiry Card on page 1)

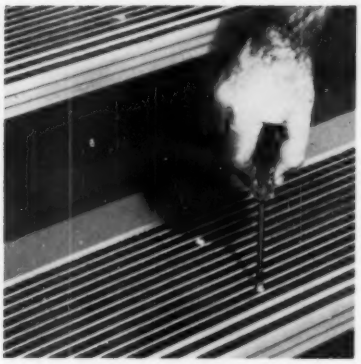
A FLAMEPROOFING chemical for the treatment of textiles containing acetate rayon fibres has been announced by the Flamort Chemical Co. According to the company, the fire retardant, designated as Flamort-"U," is the only known chemical that will successfully flameproof fabrics such as acetate rayon, Celanese, Nylon, as well as mixed fibres such as acetate rayon and cotton, acetate rayon and linen, etc. It has been approved by the California State Fire Marshal and meets requirements and specifications of the National Fire Protection Association and A.S.T.M.D. 626-41 T.

Flamort-"U" is colorless, and will not affect the tensile strength of any material to which it is applied. It is available in concentrated or in ready-to-use form, and is applied by spraying or immersion. Treatment is permanent, but fabrics require re-treatment after laundering.

MARBLE PROTECTIVE SEALER

(Use Key # 726 on Inquiry Card on page 1)

A PENETRATING sealer to prevent marble surfaces from staining and discoloring has been announced by the Watco-Dennis Corp. The new product, Watco Marble Seal, is a penetrating oil and resin polymerizer that seals the porous surfaces of marble and similar stone products from within. It is not a surface coating such as wax or silicone that can wear or wipe away. The makers report that tests have confirmed the ability of the new seal to resist staining of marble surfaces, including food coloring, inks, and the usual household stains. The product is merely wiped on, allowed to penetrate, the surplus removed, and a completely sealed surface results.



STAIR RESTORING TREAD

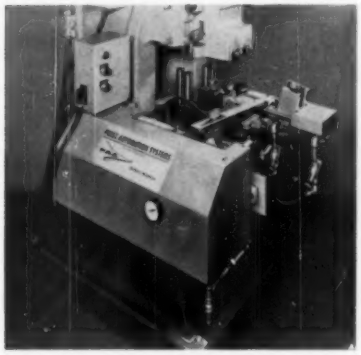
(Use Key # 727 on Inquiry Card on page 1)

A QUICK, EASY method of restoring worn, slippery stairs using a recently developed aluminum safety tread is announced by Wooster Products Inc. Plastic Mix Leveling Compound is troweled over the worn areas of the steps to return the step to a level surface. The step is then capped with the new Super Stairmaster safety tread. The treads are 9" wide with beveled back and fit all steps up to 13" wide. The base of the tread is heavy-duty aluminum with ribs of diamond-hard abrasive providing an anti-slip walking surface. Proper fasteners are furnished for installing on various types of stairs. This method eliminates closing off stairs for extended periods of time while repairs are being made.

NEW PRESS FEEDING UNIT

(Use Key # 728 on Inquiry Card on page 1)

A PACKAGED, plug-in feeder unit that automates open-back inclinable presses to promote safety and increase production of small stampings is available from Press Automation Systems, Inc. Called the Pas-It feeder, the unit can feed parts into dies at rates from 40 to 60 pieces per minute. The



feeder unit mounts on the side of a press. It transfers parts to the die from an operator-fed, preload station located out of the die area. The parts are removed from the die by air ejection or other type of automatic unloading means. The air-powered unit has an arm that travels back and forth to pick up parts from the preload station and place them in the die. Part pickup is accomplished with vacuum-lift, electromagnets or gripper fingers.

The arm is lifted by a cam action at both ends of the stroke to raise and lower the parts for pick-up and deposit in the die. The unit is provided with a safety interlock system in which the press cycles the unit and the unit then cycles the press. To install the Pas-It feeder on a press, an adapter plate is bolted on the side of the bed or die. The feeder is then bolted to this plate. Press cycling limit switches are provided with the unit.

INDUSTRIAL STEERING AID

(Use Key # 729 on Inquiry Card on page 1)

A SPECIAL STEERING wheel with an automatic clutch built into the hub, to eliminate shock and kickback, has been designed by the Kosch Mfg. Co. to reduce accidents with industrial trucks, tractors, fork-lift trucks, etc. The Kosch Steering-Aid gives the operator of materials handling vehicles "battle-free" control over his machine. The wheel, which contains no expensive hydraulic or electrical system, can be installed in a few minutes on any standard shaft. The company reports its unit will handle any load force and hold vehicle wheels in any set position. Increased vehicle control is correlated with reduced hand and wrist injuries.

VACUUM LIFTER FOR PUNCH PRESS

(Use Key # 730 on Inquiry Card on page 1)

A VACUUM lifter for feeding and removing work from punch presses is available from Safety Vacuum Lifter Co. Unit lifts and holds parts securely, releasing instantly with a light touch upon the thumb lever, and permitting the operator to work without placing his hands under punch press ram. The lifter is also used for transferring sheets and parts from piles or stacks. It protects hands from contact with burrs and sharp edges, and keeps soil and perspiration from marking highly polished and finely finished surfaces.

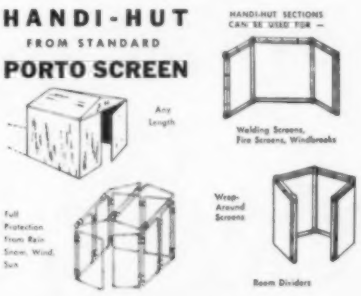
Length of handle is 15"; cup diameters are 1½", 2½" and 4". There is no metal on the inside of cup to mar the surface of material or parts being handled. Designed for all non-porous materials, such as metal, plastic, fibre, glass, tile, linoleum, etc.

FIRST AID SPLINT

(Use Key # 731 on Inquiry Card on page 1)

AN EMERGENCY SPLINT that an untrained attendant can apply to a fractured limb in thirty seconds is being manufactured by the Orthopedic Frame Co. In addition to its light weight, x-rays may be taken without removal of the splint. Replacing complicated splinting devices which took at least fifteen minutes to arrange and required services of a trained attendant, the Stryker splint is calculated to reduce incidents of transportation injury to patients who are being taken to the hospitals. In many accident cases involving arm or leg fractures, injured persons arrive at the hospital having sustained further injuries. This has been attributed to difficulties that ambulance personnel are faced with involving time factors and complicated use of splinting devices.

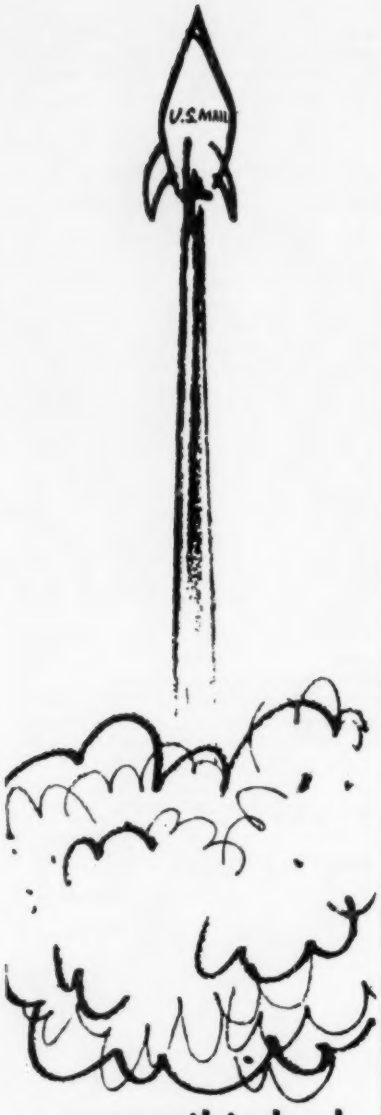
The Stryker Emergency Splint combines shaped aluminum half-sections with built-in padding and traction. It is fastened by three web straps to provide moderate, uniform compression to control bleeding and swelling. The corrosion resistant splints can be readily stored.



PORTABLE DIVIDERS

(Use Key # 732 on Inquiry Card on page 1)

A NEWLY designed Porto-Screen Series 60 has been announced by Frommelt Industries. When assembled, it makes a "Handi-Hut" for work shelter and storage use, as well as a variety of screens, room dividers, etc. A 6' x 6' x 7' hut can be assembled in minutes with 8 standard frames to form the side walls and two to form the top. Standard clamp hinges permit panels to be hinged for doors. Assembly is fast and easy with new clamp hinges. Any number of these units can be joined to make portable shelters to protect personnel from inclement weather. Entire assembly stores compactly when not in use. Frames are made of tough, durable steel tubing panels complete with U.L. approved fabric curtains.



zone mail indeed results in speed

The Post Office has divided 106 cities into postal delivery zones to speed mail delivery. Be sure to include zone number when writing to these cities; be sure to include *your* zone number in *your* return address — after the city, before the state.

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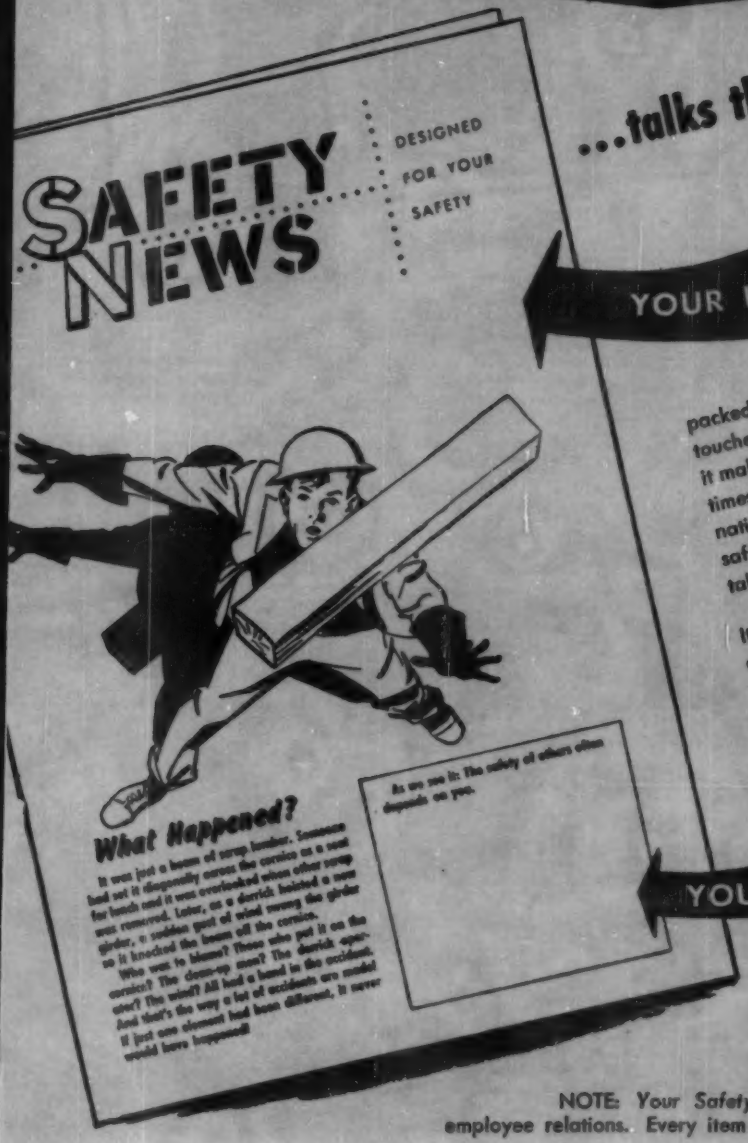
SEND THIS PERSONAL SAFETY MESSAGE TO EVERY ONE OF YOUR EMPLOYEES.

- Safety is made appealling . . . vivid . . . engaging . . . colorful!
- Each worker clearly sees how safety benefits him . . . how doing his part helps others!
- You get enthusiastic safety cooperation instead of tolerance . . . from every employee . . . every month!



. . . talks the worker's language!

YOUR IMPRINT HERE!

packed with pictures, alive with animated cartoons, touched with humour that gives snap to your message, it makes safety interesting and down to earth. Twelve times a year it covers accident hazards. Across the nation leading industrial firms state it's the only safety paper their employees will read . . . and take home to their families.

It gives the employer the advantages of personal contact . . . saves time and expense. One "lost time" accident prevented . . . more than pays for the yearly cost! Try it . . . it works!

YOUR SIGNATURE HERE!

Make *Your Safety News* your own publication . . . your good will ambassador . . . working for you toward better industrial relations. If you wish, your facsimile signature can be printed here to identify you with the message that gets next to your men and boosts morale.

NOTE: *Your Safety News* is designed to promote better employer-employee relations. Every item is carefully weighed and tailored to this viewpoint!

INSIDE PAGES
(Pages 2 and 3)

THOUGHTLESSNESS IS A THIEF
He'll steal his way into what you're doing, distract your attention and walk off with a finger, arm, eye or foot. Thoughtlessness takes many forms: it may be daydreaming, or worry about some personal problem, or just plain inattention. Anything that distracts you, especially around machinery, is a thief of your personal safety.
PLAYFULNESS IS A PIRATE
He is a deceptive rascal. His hi-jinks may put him in the spotlight, but his practical jokes and showing-off often result in serious bodily injury and even death. And note this: he, himself, has lost a leg! As so often happens, horseplay can boomerang and the practical joker gets hurt too!
What You Should Know About Carbon Monoxide
This is a picture of carbon monoxide gas!
That's right, you can't see it. It's colorless, non-irritating, tasteless, practically odorless, but also deadly.
Here are the symptoms of carbon monoxide poisoning: first, a tight feeling across the forehead, followed by headache, throbbing temples, weariness, weakness, dizziness, nausea, loss of muscular control, increased pulse and breathing. BUT if the concentration of the poison gas is high, there may be loss of consciousness without these warning signals.
Just a few breaths of air containing 1% carbon monoxide can be fatal . . . so can one part of carbon monoxide in a thousand parts of air when breathed for 90 minutes.
It is possible for carbon monoxide to leak inside of a car if there is a loose exhaust pipe or manifold connection, blown-out exhaust gasket, cracked exhaust manifold, or leaky muffler. Play it safe.
1. Be sure your muffler and exhaust are in good condition (they can look fine before they become rusty).
2. Always keep a car window open, even a little, for fresh air.
AN INTIMATE LOOK AT FOUR VILLAINS
SAFETY LAZINESS IS A SIMON LEGREE
If you are lazy about safety rules, then accidents will have the whip hand. We are safety-lazy when we don't bother to use mechanical guards, to take time to get the right tools for the job, to wear protective equipment such as goggles, hard hats, safety shoes, respirators, gloves, etc. Yes, Simon Legree has a whole pack of accident hounds to trail you.
HAZARDOUS METHODS ARE A HOLD-UP MAN
This villain, unsafe work habits, likes to lie in ambush for the unwary. But how do we fall into bad working habits? It may be by trying to cut corners, by wanting to keep to the old way of doing things, or by over-confidence. It's hard for anyone to believe that an accident can happen to him. It's easier to make excuses to ourselves for ignoring safety rules, but alibis only lead us up a blind alley with an accident waiting in ambush.
Two Excellent Reasons
For Wearing Safety Shoes

EMPHASIZES SELF INTEREST

Your employee's self interest in his own safety is always emphasized. Constant safety consciousness is promoted by covering household hazards, transit to and from the job and on the job caution against accidents.

CLEVERLY ILLUSTRATES THE POINT

Artwork is carefully chosen to lodge home each point persuasively. The cartoon style makes YOUR SAFETY NEWS as familiar and welcome as the picture packed Sunday supplement.

WINS READERS WITH A FOLKSY APPROACH

Keeping the contents folksy, adding the light note of humor, gets your message across with a nudge instead of a bludgeon. Your monthly chat gets enthusiasm instead of indifference.

RIVETS ATTENTION WITH VIVID COLOR

Generous use of color sparks the message, and adds impact to the contents of YOUR SAFETY NEWS. Each issue is as alive as any news-stand favorite.

HOW TO ORDER:

YOUR SAFETY NEWS may be ordered with either the standard imprint or with your Own Special Imprint. The standard imprint reads "PLEASE COOPERATE FOR THE SAFETY AND HEALTH OF ALL . . . signed . . . A SAFE WORKER."

You can personalize YOUR SAFETY NEWS with the name of your firm and the name or facsimile signature of a company representative as illustrated. Give full instructions for your Special Imprint on the order blank below:

Item (1) FIRM NAME: Please show the name of your firm exactly as it is to appear.

Item (2) INDIVIDUAL NAME OR SIGNATURE: (If Desired). On a sheet of white paper, please show, in black ink, the individual name or signature, if desired, which is to appear each month on the first page of YOUR SAFETY NEWS.

NOTE: Although a personal signature is effective, some firms substitute: SAFETY DEPARTMENT, YOUR SAFETY COMMITTEE, A SAFE WORKER, etc.

CUT OUT AND MAIL TODAY!

ALFRED M. BEST COMPANY, Inc. • 75 Fulton Street, New York 38, N. Y.

Gentlemen:

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☐ Special Imprint ☐ Standard Imprint

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3,001 to 6,000 copies . .	3¢ each	2½¢ each	100 to 199 copies	6½¢ each	5¢ each
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PRESIDENT'S 20th ANNIVERSARY
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SERVING EYE SAFETY PROGRAMS
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GOGGLE CLEANING STATION
PRESIDENT's 20th ANNIVERSARY
May 1960 MARKS THE 20th YEAR OF SERVICE BY OUR PRESIDENT TO EYE SAFETY PROGRAMS
K-LENS-M Better Vision Products have contributed greatly over these years in helping Safety Directors KEEP SAFETY IN SIGHT for their eye safety programs.
Here's our SPECIAL OFFER to celebrate the 20th Anniversary:
20% off on purchases of K-LENS-M Dispenser Cabinet No. 200 and K-LENS-M Skyscraper Cabinet No. 200-G16. Take advantage of this big 20% savings. Contact your Safety Equipment Supplier or write direct!
This Anniversary Offer expires May 31, 1960.
The Modern Liquid Method Cleans and Anti-Fogs Glass or Plastic
THE WILKINS CO., INC.
Cortland 2, N. Y.
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First aid for throat irritations . . .

THANTIS Lozenges prevent lost man hours due to sore throats caused by coughs or colds.

THANTIS Lozenges relieve pain promptly—reduce infection—act prophylactically.

HYNSON, WESTCOTT & DUNNING, INC.

Baltimore 1, Maryland

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